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## THE PREOPERATIVE PREPARATION OF PATIENTS FOR BILIARY TRACT SURGERY\*

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BENJ. W. WARD, M.D.

TULSA

This subject in its various phases has been exhaustively discussed in the past. However, after scanning the recent literature and above all, noting the prevailing lack of attention to the details of such preparation, the conviction has been forced that emphasis upon it would be timely.

The profession has long since recognized the vital necessity of careful preparation of surgical diabetics. No conscientious doctor would essay surgery on a diabetic patient without a painstaking attempt to control the diabetes itself during and after the operation. In diabetes as in many cases of intestinal obstruction it has been realized that some delay to properly prepare a patient is not only justified but pays dividends in decreased mortality. Since biliary tract surgery is only very rarely of an emergency character, ample time for preparation may be taken.

For years the danger of surgical procedures on jaundiced patients or those newly recovered from jaundice has been emphasized so that today it is common practice to give intravenously calcium chloride or lactate, transfusion, hemostatic sera, radium applications over the spleen, etc., to increase the coagulability of the blood, decrease bleeding time, and so avoid the catastrophe of hemorrhage so feared in such cases. Too, infusion,

hypodermoclysis, proctoclysis of glucose solution have been advocated and used. This paper has as its aim the emphasizing of adequate preoperative preparation for all biliary tract operations whether the patient be jaundiced or not and including cases that have never been jaundiced.

It is generally admitted that sooner or later in the presence of chronic cholecystic disease, with or without stones, hepatic reaction occurs<sup>1</sup>, even tho no obstruction be present. For this reason every case of cholecystitis must be considered as a possible case of associated hepatitis and treated accordingly. We, therefore, believe that all cases involving biliary tract surgery, from a simple chronic cholecystitis without stones and a history of brief duration, to the jaundiced, cholemic patient with a history of long continued disease should be handled preoperatively with the view of protecting the liver parenchyma and bringing it up to maximum efficiency under the existing conditions prior to operation.

The general preoperative care of patients should be so well known that to here call attention to the need for dental hygiene, insurance of freedom from pulmonary infection, estimation of kidney function, etc., would be boring and unnecessary. However, since most cases of biliary tract disease of any duration, and particularly those who have had obstructive phenomena, present more or less impairment of kidney function and often of cardiac function it is mandatory that the

\*Presented at the meeting of Oklahoma State Medical Association, Oklahoma City, Oklahoma, May 11-12-13, 1931.

exact capabilities of these organs be determined prior to operation. The services of the internist are here very valuable and in addition serve to divide the responsibility. Sufficient rest in bed for a weakened myocardium with digitalis, as indicated, often means the difference between a successful outcome and a mortality. A renal function test in all cases and determination of urea nitrogen and creatinine in the blood in most cases is obligatory. Here again, rest, fluids, proper diet, and in certain cases, glucose solution intravenously for a sufficient period prior to surgery, prevents many a disaster.

The majority of these patients are constipated and have been for long periods. It seems folly to purge them vigorously, deplete them, depress the intestinal musculature with certain drugs or make it over-irritable with others just prior to operation. Many have spastic colons, often as a result of the diseased biliary tract; appropriate treatment relieves them or at least helps them until surgery has been done when a definite plan of treatment can be carried out as long as necessary. One of the important functions of the liver is the detoxication of material absorbed from the intestinal tract. This is done incompletely by a damaged liver, thereby depressing the general health, or if done completely, the extra burden imposed on already impaired liver cells by intestinal stasis is great and predisposes to increased liver damage. The intelligent handling of constipation, therefore, for some time prior to operation—if at all possible—materially assists toward a favorable outcome of surgery. If this is impossible due to urgency of a case, at least depletion and harmful interference with the intestinal musculature can be avoided by using repeated oil enemata, carefully given.

A point which may well be stressed and to which insufficient attention is given is the intelligent reduction of excess weight. "Fair, fat, and forty," particularly the "fat and forty," portion is true in the majority of cases. When time permits, a reduction in weight to a figure approximately the normal, of course, unaccompanied by exhaustion and dehydration, is most valuable from the standpoint of easier and gentler surgery as well as increased ability to stand surgery. Another advantage particularly worth considering in this era of spinal anesthesia is the lessened danger of the Trendelenberg pos-

ture. It has been pointed out that in fat people with mesenteries weighty with adipose tissue, the Trendelenberg posture so necessary after induction of spinal anesthesia causes the impingement of the heavy intestines against the diaphragm and so embarrasses respiration and increases the liability of vomiting.

The administration of sodium phenoltraiodophthalein or its isomer either intravenously or orally immediately before operation seems poor practice. At least three or four days and preferably longer should intervene, for while the dye seems relatively non-toxic it does impose an added burden on the liver cells in its elimination and, as has been mentioned before, at the time of operation the liver should be in as good a condition as it is possible to obtain. Incidentally, in cases of severe jaundice, it is felt that the administration of the dye is not devoid of danger. Dick and Wallace<sup>2</sup> have shown that there is a danger of causing a pancreatitis as well as the exertion of a direct toxic effect on the overwhelmed liver cells. Besides, in such cases little or no diagnostic information is obtained, so that reliance must be placed on history and clinical signs, duodenal drainage, etc.

In the consideration of the possibility of hemorrhage in biliary tract surgery, it is believed that regardless of jaundice present or past a careful estimation of the coagulation and bleeding time should be made on all cases. There is always the possibility of a latent jaundice. In fact, when the coagulation or bleeding time is abnormal in the absence of jaundice or a history of jaundice, the icterus index or Van den Bergh test will often reveal latent jaundice. Several years ago it was the humiliating experience of one of us (B.W.) to operate on a young lady with gall stones who had never been jaundiced without, thru some misunderstanding, a coagulation or bleeding time. The skin incision was made and the patient then had to be sent back to her room with tight abdominal compresses because of an uncontrollable ooze which was completely stopped only after intravenous calcium chloride, and application of radium over the spleen. Subsequent check showed an icterus index of 10, coagulation time 15 mins. and a bleeding time of hours. All cases with jaundice should receive some form of calcium therapy, as 15 grs. of calcium chloride for three consecutive days prior to operation, given intravenously and, of



course, 5 to 10% dextrose solution. Ravdin<sup>2</sup> has demonstrated that intravenous dextrose solution will reduce the coagulation time often within 20 mins. after injection and maintain the reduction in many cases as long as 6½ hours. He puts all his faith in glucose solution and disparages the use of calcium chloride. However, at this time it is felt that since careful administration of calcium chloride intravenously is not harmful it should still be used in addition to glucose solutions. In toxic, depleted cases or in anemic states whole blood transfusions of 250 c.c. repeated if necessary, not only reduce the tendency to hemorrhage materially but are wonderfully stimulating in their effects.

What is believed to be the most valuable single measure in the operative preparation of these cases has been reserved till last, *namely*, the adequate administration of carbohydrates and sufficient fluids. A prime function of the liver is the storage of glycogen and its ability to do this depends on many factors the discussion of which, here, would be too time consuming. It may be said, however, that the functional efficiency of the liver may be roughly gauged with certain limitations by its ability to store glycogen. Again, it has been shown that the power of the liver cell to regenerate is tremendously influenced by the amount of carbohydrate absorbed. Further, it has been demonstrated that the resistance of the liver cells to injury varies with the amount of glycogen contained and that general anesthetics—chloroform and ether in particular—damage liver cells more rapidly and completely in the absence of glycogen than when it is present in ample amounts; this fact should be noted carefully by those who persist in the use of ether anesthesia in cases that have suffered advanced liver damage. Finally, since the blood sugar level is maintained solely or almost solely by mobilization of glycogen from the liver, it can readily be seen that a hypoglycemic state may result unless the liver supply of glycogen be maintained during the added strain of surgical procedure. These rather rambling statements serve to indicate in a hazy way the physiologic basis for preoperative pushing of carbohydrates whether in the form of a high carbohydrate diet in the good operative risks or in the use of dextrose solutions intravenously over periods increasing in length as the gravity of the case increases. A

full discussion of the physiology of this treatment was given by Ravdin in the A. M. A. Journal, and an admirable discussion of carbohydrate metabolism appeared recently in *International Clinics*<sup>1</sup>. It is believed that 2000—4000 c.c. of 5 to 10% glucose solution intravenously per 24 hour period should be given to all cases with evidence of marked liver damage. The amount and concentration to be given depending on the degree of dehydration and caloric intake needed. The fluid is important both to relieve any dehydration present and also because it has been shown that the liver needs adequate fluid in order to store glycogen. The milder cases of chronic cholecystitis do well on a high carbohydrate diet for at least three days prior to operation with plenty of fluids.

It is fully appreciated that an acutely jaundiced patient whose icterus index is stationery or increasing cannot be permitted to go without decompression of the biliary apparatus while days of preparation pass, such cases can truly be considered emergencies. However, even they are materially benefited by preoperative intravenous glucose kept up until the time of operation (and thru and after it).

#### SUMMARY

Attention is directed to the necessity of careful preparation of all patients who are to undergo biliary tract surgery. Emphasis is laid on the importance of such preparation for cases who have never been jaundiced as well as those that have.

It is felt that proper preoperative care includes a most careful estimation of kidney and heart function in addition to general care and proper relief of intestinal stasis.

The administration of iso-iodoikon or iodoikon just prior to operation is decried, as is their use in cases where aid to diagnosis cannot be expected through such use. All cases, disregarding presence or absence of jaundice, should be investigated as to the danger of hemorrhage and latent jaundice so guarded against. Calcium chloride intravenously, dextrose solution and transfusion are advocated to exclude the danger of hemorrhage.

The preoperative use of carbohydrates by diet and intravenous glucose in conjunction with fluids is most strongly urged in all cases, manner of administration and



amount to be determined as indicated in each individual case.

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DISCUSSION: *Dr. Horace Reed*, Oklahoma City, Oklahoma.

It has not been very long ago when considering an operation upon a patient that we gave a great deal of thought to the consideration of the heart. The wise surgeon of today thinks less of the heart and more of the liver. We have learned through bitter experience of the condition of the liver and its power to function under stress that it determines the outcome of the patient. Crile was the one who emphasized that in a big way. He applied heat to the liver, not only before the operation but during the operation. The study of the liver and its action in diabetes has informed us that liver function and liver stress can be controlled largely by the pre-operative preparation. If the liver is well stored with glycogen, it can take care of a lot of toxemia that it otherwise could not do. Dr. Clinton's paper leaves very little constructive criticism and I can think of nothing of a destructive nature. I have a few thoughts that I might mention. I have learned to respect the mental attitude of the patient when he is approaching an operation. I dislike to operate upon a gall bladder case which is frightened. I do not know just what that effect is, but the liver is out of fix. There is evidence afterward, that we associate with a disturbed liver function, perhaps, it is because the liver before operation has not been properly prepared. I strive with all my might to try to keep the patients' minds off the morbid thoughts that they would otherwise naturally have, and I try to assure them, try to point out to them the wonderful condition in which they will be after the operation. I try to keep them in the proper mental attitude, so that they will function normally before they approach the test. Hence in these liver patients, I stress the fact that they should live their normal lives as nearly as possible, partake of wholesome foods and drink more water than they are normally in the habit of drinking. When we resort

to the method of introducing glucose and I believe in it thoroughly, I know of no material which saves more lives when properly used, but when used as a preparation before operation, it tends to upset the patient's mental condition, therefore I prefer not to use it. I insist that the patient eat wholesome foods rich in carbohydrates, and I suggest to the husband, if the patient is married, or to the beau if the patient is a bachelor girl, that he might send around a box of choice candy. The same thing is true in the diabetic patient, except I lean most heavily on the internist. There are those who are trained in the management of diabetes, and I always prefer to have my internist friend care for the diabetic. I do not fear to operate upon a diabetic, if he has been in the hands of an internist who knows his business. I was skeptical about this procedure, until I heard the master of diabetes, Joslin, three or four years ago advise us to place the diabetic in the hands of the trained internist.

As to hemorrhage: We have not been in the habit of routinely taking the coagulation test in the gall bladder case, unless he is jaundiced. If the coagulation time is 5 or 6 minutes, we try to bring that down. We have not encountered any great difficulties by that manner of handling the patient.

This is a timely paper, because it has been proven that the liver can be brought up to a high standard of resistance to the point where it will function, and unless we can bring it to that point, we had better defer the operation until a more timely day.

We should adopt the slogan "Not what is the condition of the patient's heart, but what is the condition of the liver."

*Dr. L. J. Starry*, Oklahoma City, Okla.

I think that it is an extremely healthy sign in a sectional meeting of this type where some emphasis is placed on pre and post-operative treatment. It has been the custom to emphasize the operative technique whenever we considered any surgical subject. I congratulate Dr. Clinton and Dr. Ward on bringing this paper on pre-operative care. It is of the utmost importance. Many times the fate of the patient is decided in the week or the three or five days previous to the operation. ....

We know of course, that patients may

be divided into two classes: those who need emergency operations and those who do not need emergency operations. Those who need emergency surgery are quite in the majority. It is of the utmost importance in biliary surgery to strengthen the function of the liver previous to the trauma of an operation.

*Dr. Benj. W. Ward: Closing Discussion:*

I thank Dr. Reed and Dr. Starry for their discussions of our paper. We agree with Dr. Read in his attitude in regards to the mental treatment of the patient. We agree too, that the use of the introduction of glucose intravenously tends to excite in the patient's mind some apprehension as to their operative procedure, and for that reason we with-hold such treatment except in those cases, where the history of the case indicates there has been a long standing infection and necessarily some involvement and retraction of the hepatic tissue.

In regard to hemorrhage—Dr. Clinton mentioned an embarrassing experience, and I might say that experience happened to me. If we have operated on a patient and had to send the patient back to his room after making a skin incision, it has certainly been most embarrassing. I believe that it will be routine procedure after such an incident in biliary conditions to take a bleeding time. So in all biliary tract surgery, let us take a coagulation and bleeding time.

#### HEALTH, MUSIC AND PROSPERITY

Under the title of Health, Music and Prosperity, a magazine primarily devoted to professional musicians and to the "homes of progressive people where musical culture is looked upon as an indispensable life asset" has distributed a pocket size "normal food chart advocated by noted physicians, food experts and nutritional chemists." This document alleges that "music has an important bearing upon the health and prosperity of all. Nothing excels music in keeping up the spirits. The tired business man who can come home and spend an hour at the piano keyboard, instead of burning up his energy and initiative with worry, is far better equipped to meet the problems of tomorrow."

This sounds like commendable advice, particularly when it is properly discounted for the mild hyperbole that any enthusiast may be pardoned in expressing with regard to his vocation or to his favorite avocation. However, the admonitions do not end with experiences derived from the domain of music. The chart proceeds with this vigorous reminder: "Make up your mind whether you are to have a starch meal or a protein meal. Never mix the two groups at the same meal." This seems to be a survival of the idea fostered

by many food fanatics intimating that "a mixture of certain foods is certain poison." In a discussion of health superstitions, the author<sup>2</sup> has recently indicated how the belief that it is dangerous to eat fish and celery at the same meal is one of the popular food combination ideas, others being that it is dangerous to eat lobster and cream, strawberries and cream, protein and carbohydrates, pickles and peaches, and indeed all sorts of other combinations, according to individual notions. Our daily bread—the staff of life for countless thousands—is a mixture of proteins and starch. Are we to believe that the "experts" would interdict bread or any of the comparably composed cereals that form the main source of the world? According to the musically promoted advice, the idea is "not to mix the foods that produce noncompatible digestive solutions." By way of interpretation we are told that "carbohydrates require an alkaline solution provided by nature for digestion. Meats and acid fruits require a natural acid solution." As a matter of fact, modern biochemists assure us that starch (and sugar) digestion can proceed favorably in a medium that is practically neutral (ph 7.0): and, of course, any tyro in the subject knows that proteins undergo a series of digestive changes in the alimentary tract, some in the acid medium of the stomach, others in the quite different reactions of the intestine. One might almost suppose, from the musical warning, that nature had made a serious mistake in the organization of our marvelous digestive functions. Nor is this all. We are specifically reminded by the chart that "milk is a protein" and should be consumed with this limitation in mind. What will the dairy industry reply to this oversight of the carbohydrate milk-sugar, which constitutes about one fourth of all the energy in "nature's most nearly perfect food?" Even skimmed milk cannot get away from its constituent lactose. And then there is the warning that fruit salads should be taken only with protein meals. But why go further? There comes the reminder "Shoemaker, stick to your last." Before modern scientific dietetics anybody was entitled to a hearing on the subject of foods. Now scientists realize the special knowledge that is necessary for sound judgment, but quacks exploit the public ignorance and the public's interest.

—*Jour. A. M. A.*, July 25, 1931.

#### AMAUROSIS IN EPIDEMIC ENCEPHALITIS

Irving J. Sands, New York (*Journal A. M. A.*, April 13, 1929), reports an unusual case of epidemic encephalitis. The diagnosis was arrived at after a careful evaluation of all the presenting signs and symptoms. The definite history of exposure to infection, the rapid onset of impairment of vision, the multiplicity of lesions and the changing signs and symptoms led to the conviction that the disease process was of an inflammatory, disseminated, irritative nature, rather than of a neoplastic type. While the roentgenogram showed a calcified pineal shadow, Sands felt that he was not dealing with a true internal hydrocephalus caused possibly by an enlarged pineal gland. The presence of papilledema was an annoying symptom. It is not commonly encountered in cases of epidemic encephalitis. The duration of amaurosis in Sands' patient makes the case particularly unusual. She was totally blind for twelve days. The administration of typhoid vaccine in epidemic encephalitis, especially in the presence of only a slight elevation of temperature, has proved helpful.



# POST-OPERATIVE CARE OF THE PATIENT

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C. K. LOGAN, M.D.  
HOMINY

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Of the three phases of surgery, preoperative care, the operation itself, and post-operative care, the most neglected and most important phase is post-operative care. Too many surgeons forget that their work and responsibility is only partly over when they have finished operating. Many an excellent operator is an indifferent post-operative fighter and many an excellent operation is in vain because it is needlessly lost in the convalescent room. It is often the case that a well performed operation will have a long, painful, dangerous convalescence and an imperfect result, while a poorly done, rather bungled operation will have a safe and speedy recovery with a perfect result due to post-operative care. Bartlett says that the need of after-treatment is in inverse proportion to the quality of work done on the operating table. (Maybe this is the reason I have given it attention.)

Of course this subject is too extensive to even scratch the surface in the short time allowed here. It will be the objective of this paper to remind us of our duty to stand by and help after the operation as well as to point out a few post-operative conditions that may be prevented.

There is an old adage that every surgeon should be operated on in order to realize the suffering the patient undergoes through his own work. It is said that the memory of pain is short lived, but if we can alleviate to any extent the severe agony of an operation, we have done a great service to the patient who has our confidence and affords us our financial income.

In no phase of surgery is more individuality shown than in post-operative care. Many great surgeons vary greatly in this, and seem to have the same results. What we should keep in mind is that no iron-clad rules work. There is a difference in degree of toxicity, ability to stand pain, and extensiveness of surgical work done on each class of operations. We should not attempt to follow a definite routine

operation itself calls for correct mechanical work but the post-operative care calls for common sense. It is this phase of surgery that makes it imperative that operators should first be physicians in the true sense of the word.

The post-operative care begins when the last suture is tied, so our first consideration is a safe and comfortable dressing, and next, attention to prevent possible iodine or ether burns. Then as the patient is returned to his room he begins the immediate recovery of the effects of the anesthesia and the operation. We should place ourselves in the place of our patients in our own minds in trying to take care of what may seem small details in making our patients comfortable. Small discomforts added to the discomfort and on any certain class of operation. This op-shock that accompany all operations get to be great discomforts to a patient just recovering from an operation. There is a psychic condition about every operative case that is not allayed at such times by psycho-analysis, but by attention to all the details of their comforts.

The average case operated under any general anesthetic wakes up with three prominent symptoms; nausea, thirst, and pain. Nausea may be present in other cases when there are various symptoms apparent, but in a post-operative case there is usually accompanying the nausea a feeling that no medical term describes. There is a general depression that one of my patients described to me as a kind of "soul sickness." Drugs and drinks do little to settle this nausea. Unless contraindicated because of some gastro-intestinal operation a gastric lavage in the form of a glass of warm water given as fast as the patient can drink it is often very helpful. It is promptly vomited up with usually some relief. In emergency operations where there has been no opportunity to prepare the patient for the anesthetic, care must be taken to see that none of the



vomited material chokes the pharynx or is sucked down the bronchial tubes.

Thirst is best taken care of by giving ordinary tap water in small sips as soon as the nausea will permit, if not contraindicated by a serious abdominal condition. Cracked ice held in the mouth does not relieve the thirst so well and sips of ice water often cause an irritation of the stomach. Dehydration follows most operations and is felt more by thin patients than by the plethoric type. The fundamental physiological principles to be remembered is that water is not absorbed by the walls of the stomach, nor to any great extent until it reaches the colon. In patients where nausea persists after drinking considerable water by mouth, the thirst is not alleviated. This condition is understood by most surgeons and too often we order a proctoclysis and let it go at that. If we would take time to investigate we would be surprised how often we are disappointed by this process, and how often we have only a wet bed and no results. In border line cases where treatment of dehydration is not too imperative, I prefer retention enemas, but in any serious case hypodermoclysis is the method of choice. For this purpose ordinary tap water, sterilized, is the water of choice.

Pain is the principal symptom our employer, the patient, wishes to avoid. For this symptom morphine is the drug of choice. In this case our post-operative treatment begins just before the operation. The average adult patient should be administered 1-4 grain of morphine and 1-150 grain of atropine before his anesthesia. This makes him take his anesthetic better, has a tendency to prevent post-operative shock and makes his recovery from the anesthetic, and immediate effects of the operation more easily borne. This may be used as a routine but the second dose should not be. Every possible effort should be made by the physician to keep the patient from depending upon frequently repeated "shots" of morphine. Individuals vary greatly in the pain resisting functions of their nervous system. Every doctor has seen cases that have undergone the same treatment where the big "he man" will apparently suffer the tortures of the damned, and some "sissy boy" or "chronic invalid" woman will stand the identical treatment with great fortitude. The real physician realizes that if a patient thinks he is suffering he is suffering, and that a psychic

pain is just as acute or more so than just physical pain without the psychic element. In these psychoses cases, and very nearly all are to some extent, I find that sodium amytal administered orally per capsule is a great boon in lessening the amount of morphine given and in adding to the relief of the patient during his convalescent days. Before any drug is given for pain, after the immediate effects of the operation and anesthetic are over, a careful search should be made for its cause. Much depends upon a thoughtful and considerate nurse. Pain is often relieved by a simple change in posture, the cutting of a tight bandage, the drying or straightening of the bed clothes, or some other little attention.

As I have mentioned before, this subject is too vast to be covered in such a paper. Any item mentioned is sufficient for a subject of a scientific paper. My principal object is to remind you of the common-place conditions you deal with every day and to make a plea for the patient in trying to keep you from too much "routine" after-treatment. This paper is not intended to cover all of the complications that may arise from post-operative conditions, but there are a few that I would like to mention in passing, before I close.

Lung complications are common and should be mentioned. It is the surgeon's duty to see that the patient leaves the operating table thoroughly dry, and placed, and wrapped between blankets before being taken to a warm comfortable bed—a recovery room is preferable. Prevention of exposure will prevent many cases of ether pneumonia. Lung abscess is best prevented by care used with a suction machine in mouth, dental, and throat operations. The principal object is to prevent the inspiration of blood or infectious matter. Lung abscess may also be caused by the inspiration of stomach contents during the nausea period of recovery.

Hiccough is often a very troublesome complication. It is of some importance in peritonitis and serious cases of abdominal surgery. Our text books give us such remedies as holding the breath after drinking water, gastric lavage and leaving a tube in the stomach for hours.. Chloral hydrate and bromides are often suggested. Apomorphinae hypodermatically and water by mouth is a favorite with many but should not be used in

peritonitis or serious gastro-intestinal cases. In my own experience and in the experience of two surgeon friends, who are fortunate enough to have more surgery to do than I, I have found that the use of a very simple remedy suggested to me by a colleague, Dr. J. J. Fraley, has been more useful than any found in my text books. The treatment that he recommended to me was oil of cassia (oil of cinnamon), one drop on a small piece of lump sugar, every fifteen minutes until the patient is relieved. In my own cases and the cases of two other colleagues to whom I have passed it on, this has been the most effective treatment. I would like to suggest this treatment but would advise you to leave no treatment untried until this serious complication is alleviated.

Parotitis is an infrequent but disagreeable post-operative condition most common in peritonitis following a ruptured appendix or pelvic operation. The prevention is to give the patient chewing gum as a routine as soon as recovered from the effects of the operation and the treatment is a radical incision after it develops. Don't think your patient lay in bed and caught the mumps after the operation.

The proper use of drainage is too much to be mentioned here, but there is no excuse for ever using a hard drainage tube in peritonitis. If a tube is properly placed in the abdomen it should be removed at least by the third day. We should remember the physiology of the peritoneum and consider that our fistulous tract has been formed in 72 hours. Fecal fistula is too much trouble to both the surgeon and patient to bring it on by pressure decubitus.

In dealing with acute peritonitis operations with drainage, I would like to again remind you that I am dealing with a subject that would fill volumes. The position recommended in these conditions is with the bed level and the patient on his abdomen if possible. Each case is individual, but with the head of the bed elevated the drainage tube does not always act as a siphon.

Care should also be taken of the wound in extensive drainage cases to see that a sea of pus is not constantly under the soiled dressing which acts as a dam to drainage and causes an irritation to the wound and the surrounding skin tissue. In such cases it is often wise to leave the wound exposed to the air with no dressing whatsoever, and order it cleaned with an

antiseptic solution at intervals, however taking the precaution that the room is warm and that the patient is not thus unduly exposed.

In desperately ill cases of post-operative peritonitis, my advice would be to withhold everything by mouth from three to five days and depend upon hypodermoclysis entirely for water intake. In these cases nothing by mouth and large and frequent doses of morphine is a life saving measure. This is one part of post-operative treatment where being cruel in withholding water by mouth is a real aid in saving the patient. Withholding water also is the greatest prevention of acute dilatation of the stomach gas pains and paralytic ileus.

Before I close I would like to add that country sorghum and sweet milk mixed in equal parts and used as a high injection is a most useful remedy for elimination of gas in the intestines.

There are many other complications of post-operative conditions that the scope of this paper will not permit mentioning. I hope you will pardon the attempt to cover so much in a single paper of this nature.

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#### KRAUROSIS VULVAE

An extensive review of the literature on kraurosis and leukoplakia by William P. Graves, Boston (Journal A. M. A., April 13, 1929), indicated the difficulties arising from the conflicting terminology. A more uniform use of the nomenclature is urged, the retention of the word kraurosis in its original sense being recommended. The clinical and histologic evidence presented shows that kraurosis and leukoplakia used in the classic sense are phases of an identical process. Historical, clinical and histologic evidence further shows the intimate relationship of kraurosis and leukoplakia to cancer. The treatment of kraurosis is essentially surgical.

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#### EXCRETION OF NEUTRAL RED IN STOMACH IN ACHYLIA GASTRICA

From a study of excretion of neutral red in the stomach in achylia gastrica, Asher Winkelstein and J. M. Marcus, New York (Journal A. M. A., April 13, 1929), conclude that neutral red is excreted into the stomach whenever free hydrochloric acid is secreted. Neutral red is invariably excreted in the false achlorhydrias. It is not excreted in true achylia gastrica, whatever the cause of the achylia may be. Neutral red gives as much information as histamine and is preferable to the latter for routine use. Neutral red is helpful in the study of the normal and pathologic physiology of gastric secretion and in the differential diagnosis of the disease producing false and true achylia gastrica. They advocate the use of neutral red in every case in which achylia gastrica is suspected.



# TETANUS, THE DIAGNOSIS, PREVENTION AND TREATMENT\*

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Your attention is respectfully invited to a brief study of tetanus. This paper is presented in the belief that insufficient attention has been given by the general practitioner to the earlier symptoms, necessary prevention, and maximum anti-toxin treatment.

Tetanus is an infectious disease caused by the bacillus tetani. It is manifested by a severe type of toxemia, which affects the central nervous system, producing marked tonic spasms of certain groups of muscles, which often begin in the muscles of the jaw, hence the name lock-jaw.

The tetanus bacillus was discovered by Nicolaire in the year 1884. Kitasata, a Japanese bacteriologist, a few years later obtained it in pure culture and demonstrated it to be the specific cause of tetanus. It is an anaerobic micro-organism which is widely distributed in nature, being a constant inhabitant of the intestinal tract of herbivorous animals. Some places are richly infested with tetanus spores, especially garden soil, manure, street, and highway dust. In morphology it is a rod shaped bacillus, the spores are extremely resistant and ordinary methods of sterilization are frequently inadequate to kill them.

The bacilli do not invade the blood stream, but they produce a soluble toxin which has a special affinity for the central nervous system: it is rapidly diffused into the system and is one of the most deadly poisons known. The toxin is absorbed at its inoculating source or wound by means of the peripheral nerve filaments and carried along the axis cylinders to the central nervous system where it is fixed in the nerve cells. The toxin is also diffused to some extent through the blood and lymph.

Tetanus is more prevalent in tropical climates than in the frigid or temperate zones. It spares neither age nor sex, however, it is more frequent in men and chil-

dren owing to their being subjected to more wounds and injuries. Every wound should be considered a potential source of tetanus, even though it is common experience to see nearly all these injuries heal without developing this disease. This being true, however, should not cause us to relax in our efforts in exercising the most diligent care and using all protective measures in every wound we are called upon to treat. We should impress the public that every wound however insignificant should have proper care.

Gunshot wounds, injuries made by toy pistols, blank cartridges, fireworks, nails, and splinters, and injuries received on streets, highways, and barnyards are particularly liable to be contaminated with tetanus spores. Tetanus is in reality a wound complication. Large wounds with much destruction of soft parts, wounds of the head, spine, and extremities, and those involving joints are most likely to develop tetanus, especially if they are contaminated with dirt, particles of clothing, splinters, pieces of metal or other foreign bodies. The spores may also be carried by the ordinary house fly; also vaccine virus, catgut, gelatine, and sera may be contaminated. The last mentioned, however, is now rare, owing to the more careful manufacture and strict governmental supervision. Post operative tetanus, cord infections in the new born or following accouchment may occur. It is obvious that open wounds and clean cut wounds are not as liable to be followed by tetanus as punctured, lacerated, and infected wounds whose depth cannot be readily reached and determined. Any abrasion may be the portal of entry, and an apparently healed wound may harbor the tetanus spores.

Formerly there were many cases of tetanus following 4th of July, wounds incurred in celebrating our national Independence day, but within the last two decades, owing to the education of the public and the prophylactic measures institut-

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ed by physicians, it is rare for tetanus to develop following these injuries.

The incubation period is usually from four to ten days following a wound, but it may vary from two days to more than two months. The shorter the incubation period the more unfavorable the prognosis. The early symptoms are due to nervous excitability and consist in malaise, restlessness, chilly sensations, headaches, slight pain and stiffness in the muscles of the neck, face, and back without apparent cause, some difficulty in mastication and deglutition, frequent and painful micturition, pain and rigidity in the region of the wound, and double reflexes; slight fever may be present with an accelerated pulse rate. It is indispensable to the welfare of the patient and the satisfaction and reputation of the physician that these premonitory symptoms be recognized early, for they are rapidly followed by more serious manifestations. The muscular spasms increase, involving many groups of muscles, particularly those of the jaw, face, forehead, neck, back, abdomen, and extremities. As the disease further progresses all the foregoing symptoms are intensified, cyanosis is present and this may be pronounced, especially if the diaphragm and larynx are greatly involved. There is often thoracic oppression and agonizing pain at the base of the chest. The jaw is firmly fixed, the patient being unable to open the mouth, the abdominal muscles are rigid and board-like, the muscles of the back are greatly contracted causing opisthotonos or the body may be bent laterally.

The head is rigid and retracted, the angles of the mouth are withdrawn, giving the patient the *risus sardonicus grin*, the nostrils are distended; there may be dribbling of saliva which is often streaked with blood. The muscles of the neck stand out like whip-cords, the extremities are forcibly flexed, the arms being less involved, however, than the lower extremities. There is profuse sweating, the eyes are protruding and congested, and there is a pathetic and anxious expression on the face. The convulsive seizures may reach dreadful proportions, causing great mental anguish and physical suffering, making a picture frightful to behold.

A jar, a puff of wind, a harsh word, a sudden noise, the movement of the covering or a mere touch of the hand may throw the patient into convulsions with great pain and suffering. Patients often

complain that they are held as tight as if in a vice. The spasms may be only a few daily or be almost continuously. The pulse is fast, irregular, and weak; there may be slight febrile reaction, the temperature may be normal, however, in some cases the temperature is high. The bowels are usually constipated and frequently there is retention of urine. The mind is unclouded and remains clear to the end.

Atypical cases occur, but these are dependent on the location of the wound, the period of incubation, the insidious onset, and the early limitation of muscle group involvement. These are important only from a diagnostic view point; for the treatment and prognosis varies little from that in the classical cases.

The diagnosis should be made early for the success of the treatment depends upon the prompt recognition of the disease. If doubt exists, cultures should be made from scrapings of the wound, but delay is fraught with grave danger. I have known cases and you have too that have not been recognized early and the proper treatment instituted in time to save the life of the patient. Unfortunately the diagnosis is not always easily made, however, in a well developed case following an injury or wound the diagnosis could hardly be mistaken for any other disease.

Tetanus may resemble strychnine poisoning, tetany, hysteria, and hydrophobia. These are the chief points of difference:

In strychnine poisoning the onset is more sudden. One is often able to get some history of the drug having been taken or some suspicion of suicidal intent. The convulsive seizures in strychnine poisoning are more extensive and violent and between them there is complete relaxation while in tetanus there is only a certain degree of relaxation. There is rarely any locking of the jaw or trismus, and, if it does occur, it comes on late.

Tetany affects mainly the hands and feet and the spasms are symmetrical. The fingers are extended with the distal phalanx flexed. The thumbs are flexed in the palms of the hands, the ankles and toes are also flexed, and there is no locking of the jaw. Tetany is more common in children, and usually comes on after debilitating and exhaustive diseases.

Hysteria sometimes simulates tetanus, but usually a history of nervous disorders can be obtained. The eyes are closed, the

face expressionless, and the mind apparently dull, while in tetanus, the eyes are wide open and rigidly fixed, the face anxious, and the mind bright. Hysteria usually comes on suddenly with a convulsive-like condition with crying out between the paroxysms. There is slight or no involvement of the muscles of the neck.

In hydrophobia there are no spasms of the muscles of the jaw, rigidity is not persistent and continuous, and opisthotonos is rarely observed. Usually a history can be obtained that the patient has been bitten by an animal.

The prognosis of tetanus has been a serious chapter in medical history. It has caused an appalling death rate with a mortality hithereto of almost 100%. But with proper treatment the mortality of acute tetanus has fallen to about 70% or 75%. The shorter the incubation period the more unfavorable the outlook. If the patient survives six to eight days, recovery usually takes place. When the diaphragm and laryngeal muscles are greatly involved, the prognosis is unfavorable. Death usually takes place by asphyxiation, respiratory paralysis, toxemia, cardiac dilatation, or bronchial pneumonia.

A case of tetanus is a serious reflection on the carelessness or oversight of some one, and too often this is traced to the physician. The most effective treatment of this disease is prevention. Every wound should be opened to its deepest parts, thoroughly cleansed, all devitalized and highly traumatized tissue dissected away, and all foreign materials removed: then the wound should be thoroughly swabbed with tincture of iodine, which is most lethal to the toxin and tetanus spores. Fifteen hundred units of antitetanic serum should be injected immediately intramuscularly as a prophylactic measure in all wounds of a suspicious character. The system rapidly eliminates the antitoxin, 66% being thrown off within six days and 80% at the expiration of twelve days; therefore, as long as danger exists, especially in slowly healing and suppurating wounds, the serum should be repeated every seven to eight days. "As a prophylactic measure tetanus antitoxin merits our fullest confidence." In some military campaigns of history tetanus has taken a high toll of death, but during the recent World War all wounded received prophylactic injections of tetanus antitoxin and out of 224,089 wounded only

thirty-five cases of tetanus developed. This is a wonderful record of achievement when we take into consideration the environment of many of the wounded and the unavoidable delay that often existed before first aid and prophylactic injections could be given.

In assuming the care and responsibility of a patient ill with tetanus every effort should be made for the comfort of the patient. All cases should be isolated, and physicians and attendants should use proper precautions in handling them. The use of rubber gloves and other protective methods should be taken, especially in dressing the wound and handling contaminated dressings. It is of the utmost importance that a quiet, dark room be secured with a limited number of sensible attendants in charge and that they be instructed in all the details for the care and comfort of the patient. It is essential that everything be well organized and nothing left to chance. The physician must challenge the attack with heroic measures before much damage is done to the nerve cells.

We are in an age of unparalleled and amazing progress, and nothing demonstrates this more fully than the modern treatment of tetanus. We are fortunate, indeed, to have at our finger tips great and positive remedies in treating deadly ills. The prognosis, as before stated, is grave in every case and all cases are usually fatal unless the disease is recognized early and the proper treatment instituted. This responsibility should inspire energetic action and one should not be insensible to duty, but he should labor with honest zeal and painstaking care to direct the patient to recovery. Tetanus is not an alluring disease to treat, but it makes a ringing appeal to the physician and challenges him to do his best. He must act quickly and use commendable skill and initiative and be on the alert and get our bearings early, for this is a time of haste. Acute tetanus is a great emergency and no delay should occur.

To be successful one must strike promptly, vigorously, and persistently for "no tree falls at the first stroke." One gets divine joy out of doing things well, and happy is he who has the good sense to do the right thing at the right time, when there are so many pitfalls along the way.

Antitetanic serum is an imperial and sovereign remedy. But after the nerve



cells are damaged by the toxins it can do but little good. Therefore, it is of vital importance that the antitoxin be given early, for, in so doing, it neutralizes the toxins in the blood stream and neural lymphatic channels before much damage is done. Three things stand out preeminently in giving the antitoxin:

- a. The time of giving;
- b. The size of the dose;
- c. The method of administration.

As soon as a patient ill with tetanus is seen 20000 units of antitetanic serum should be given intravenously and 20000 units intraspinaly under proper aseptic precautions. These doses should be repeated within eight or ten hours. The second day 20,000 units should be given intravenously and 20,000 units intraspinaly and these repeated within ten or twelve hours.

The third day 20000 units should be given intravenously, and, as the symptoms abate, the interval between the doses should be lengthened and reduced until recovery takes place. For children one-half the foregoing quantities should be given. The serum should be warmed to body temperature and the median basilic is the vein of choice in giving it intravenously, using a 1½ inch, 18 to 20 guage needle on a Luer syringe. It should be given intraspinaly by the gravity method after the patient has been turned on the side. If opisthotonos is marked or spasms severe it is best to relex the patient with chloroform anaesthesia before making spinal puncture; 10 to 15 cc. of spinal fluid should be allowed to escape before injecting the serum. This serves to prevent an increase of pressure of the spinal fluid and allows a freer circulation of the antitoxin in the spinal canal. It is practically useless for therapeutic purposes to give the serum intramuscularly or subcutaneously on account of its slowness of action; in the former it takes 24 hours to have its maximum effect, in the latter three days, however, it may be given with profit in the region of the wound. Intra-neural injections may also be made on the theory that it intercepts and destroys some of the toxins in the nerve sheaths. It is well to remember that the serum is not germicidal, it is only antitoxic, and all it can do is to detoxify the system. Before giving therapeutic doses of serum to those who have asthma and hay fever and those who have been sensitized to previous in-

jections, it is best to test out their susceptibility by injecting ½ to 1 cc. and waiting a few minutes. If no reaction occurs it is considered safe to give. If a pronounced reaction should occur ¼ to ½ cc. of epinephrin should be injected immediately intramuscularly or subcutaneously.

The inoculating wound should receive early surgical attention. Closed and unhealed wounds should be incised under local anaesthesia, all foreign bodies and necrosed tissue removed, the wound then cleansed with iodine, hydrogen peroxide, calcium hypochlorite or Dakin solution and dressed daily. The wound area may be treated by means of the ultra-violet rays on the theory that the bacilli spores are killed by the hyperemia produced.

Rest and sleep are highly essential and to obtain these liberal doses of the sedatives and antispasmodics are necessary. Chloral hydrate, the bromides, sodium amytal, chloretone, and pheno-barbital, may be used. In fast recurring convulsions with involvement of the larynx and diaphragm 1 cc. of a 25½% chemically pure magnesium sulphate solution for each 25 pounds body weight should be given intraspinaly under proper aseptic precautions. This drug has great power in alleviating the convulsions, but it must be used with care, the dose increased, diminished, and repeated when needed, but one dose every 12 to 24 hours is usually sufficient. If respiratory paralysis follows its use as sometimes happens, 5 to 6 cc. of a 5% solution of calcium chloride should be given intravenously. In the writer's hands chloral hydrate and potassium bromide have been the chief drugs used for this purpose. It is remarkable how much of these a patient with tetanus can take without harm: 20 to 40 grains may be given every two to four hours until effect. It is best to begin with the smaller dose and increase as the demands of the patient require. If the patient cannot take them by mouth they may be given by bowel. Morphine is a useful drug in many conditions, but in tetanus it must be used with extreme caution and in small doses, owing to its deleterious effect on the already embarrassed respiratory center.

The diet should be liquid and highly nutritious. If the patient cannot open the mouth enough for food, feeding may be done through a nasal tube, or by nutrient enema. A 10% glucose solution should be given per rectum or intravenously if the patient is unable to swallow. It is indis-



pensable that dehydration be prevented, and, if the patient is unable to take enough water by mouth, this should be supplied by the bowel. Two or three warm baths daily, given carefully and cautiously, soothe the patient and render much comfort. As constipation and retention of urine are common, these conditions should be looked after promptly.

#### SUMMARY

Every wound should receive proper care and all suspicious wounds and injuries should have prophylactic injections of antitetanic serum. The diagnosis should be made early and heroic treatment instituted at once by giving 20000 units of antitetanic serum both intravenously and intraspinally, and repeated as indicated in the foregoing. The complicating wound should receive proper surgical care. By this method of treatment no deaths have occurred in the last five cases under my care.

A physician should be a gentleman, a scholar, a leader, and a helper of mankind. He should discharge his duties with fidelity and trust. Although he often has to work under great difficulties, yet he should possess ingenuity and resourcefulness to meet ably the unexpected, and, to do this, he often has to use consummate skill and discriminating judgment. If "culture is the cream of conduct" so is a doctor's ability to work successfully under trying disadvantages the true test of his ability. To successfully direct a person through a serious illness is an achievement of the highest order.

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#### DIAGNOSTIC INACCURACY IN TUBERCULOSIS OF BONE, JOINT AND BURSA

Joseph E. Milgram, Iowa City (Journal A. M. A., July 25, 1931), reviews the clinical impressions that he obtained in the study of 142 cases of tuberculosis of bone, joint and bursa which were verified in the pathologic laboratory. Although the classic picture emphasizes particularly the insidious onset of joint tuberculosis, in 29.5 per cent of the cases the onset was sudden. As to the relation of trauma, nothing definite could be adjudged save that the appearance of symptoms after an unusually severe injury followed often by prolonged incapacity for labor was a frequent observation. Thirty-nine, or 26.7 per cent, of the entire group stated that the pain was severe at the onset, whereas 103, or 73.2 per cent, presented the classic picture of mild to absent pain. The insistence on mild pain in "closed tuberculosis" is not justified in this material. The variability of signs was marked, and statistical analysis of factors such as the degree of muscle spasm, muscle trophy and functional limitation was not found possible. The anatomic location

often modified signs considerably. So, diaphyseal lesions exhibited considerable local tenderness. Thus, synovial lesions confined to distant recesses of the knee joint presented minimal signs, whereas articular destruction was characterized by obvious limitations of function on examination. The rapidity of appearance and the extend of abscess formation, for example, depended not only on fascial plane relationships but also on the personal equation of the patient and on the organism, a quantity not susceptible of mathematical expression. The monarticular or local character of surgical tuberculosis appears to be overstressed in the classic description. In this series of proved cases thirty-five, or 32.7 per cent, presented two or more lesions. In several cases this was responsible for a diagnosis of chronic infectious arthritis, corrected only after biopsy. Roentgen examination, while usually helpful, was often the reverse. In fifty-three cases, such examination was of no aid or was misleading. The appearance of free bodies in the knee, or local bone formation in uncomplicated tuberculosis of the spine, for example, resulted erroneously in the diagnosis in the one case of osteochondritis dissecans, in the other case of hypertrophic arthritis. The value of a negative tuberculin test in excluding tuberculosis in a moderately ill subject appeared to be amply confirmed in the series. However, the necessity of not accepting a report of a single dose of tuberculin as a negative report was apparent. Of all the simple diagnostic aids, a carefully controlled and repeated intradermal tuberculin test, if negative, is of great value in excluding tuberculosis. Experienced pathologists frankly admit their frequent inability to recognize tuberculous tissue grossly, particularly in the early cases that are being submitted to operation in these years. Unless the typical tubercle or caseating focus is visible, the tissue is grossly indistinguishable from that in a half dozen other chronic inflammatory conditions. A frozen section helps as a rule. In the author's series, it had not been utilized in many cases. But even with microscopic section, errors may frequently be made. In twelve cases of this series, section of a tissue removed for biopsy failed to reveal the nature of the lesion. "Chronic inflammation" alone could be diagnosed. Inoculation of guinea-pigs, however, demonstrated the organism in each of these twelve cases. Microscopic study alone is not reliable. The isolation of the organism is the only conclusive evidence.

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#### SUBACUTE COMBINED DEGENERATION OF SPINAL CORD IN PERNICIOUS ANEMIA

The dietary regimen introduced recently and applied with success in the treatment of primary anemia has aroused a deep interest in this disease. Numerous reports are to the effect that the diet leads to an outstanding improvement of symptoms. B. M. Fried, Boston (Journal A. M. A., April 13, 1929), asserts that the serious character of the lesion of the spinal cord in pernicious anemia and the peculiarities of tissue repair in the central nervous system render impossible a cure in the spinal cord symptoms under the influence of the liver diet. In view of the nature of the lesion, likewise, one may not expect great improvement in the nervous symptoms even though the anemia has disappeared, and it is remarkable that any functional improvement at all should occur.

# THE INJECTION TREATMENT OF VARICOSE VEINS

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Three-score and seventeen years ago, one ingenious Pravaz, inventor of the much used hypodermic syringe, injected into varicose veins perchloride of iron. The inspiration, the story goes, was brought about by methods used in the treatment of aneurisms. The technique consisted of injecting two or three drops at weekly intervals into the varicosities, thereby transforming them into fibrous cords through its coagulative sclerosing action.

Weinhemer, in 1884, treated 32 cases by injection with ferric chloride. Eighteen developed partial gangrene and one an abscess. The treatment was abandoned after some fatalities had occurred.

One more trial was given ferric chloride, and that by Negrette in 1880. The results were of no import.

A 5 per cent solution of phenol was used by Tanel, of Berne, Switzerland, in conjunction with a ligation procedure of the internal saphaneous veins. This proved more successful than any before.

He was followed by Wood with ferric sulphate, giving reports of 3 out of 11 cases cured. Valet injected an iodotannic solution, reporting one cure in 300 cases. Ollier reported a death. From 1894 to 1911 there was a period of inactivity, probably due to poor technique and unphysiological solutions.

Blum renewed the activity by the shrewd observation that sodium bicarbonate, when injected intravenously in comatose diabetics, obliterated the veins. P. Linser, of Tubingen, observed the same phenomena with mercuric chloride. Both of these men applied their observations to varicose veins. Eleven years later a pupil of P. Linser, by the same name, used a salt solution, having observed that when other solutions, as that of mercuric chloride, as used by his teacher, and sodium bicarbonate, used by his predecessor, Blum, caused toxic effects. This observation was probably the introduction of the much

used sodium chloride solution in the chemical obliteration of varicose veins of today.

A Frenchman, P. Sicard, of Marsailles school of medicine, analyzed an antisiphilitic solution he was using and found that he was getting venous sclerosis from its sodium carbonate content. He used this in a 20 to 40 per cent solution and proved that he could reduce varicose veins to fibrous cords without any untoward effects from the patient's standpoint. He did find, however, that if the solution was spilled he would get a slow healing slough. It was this shrewd analytical brain of P. Sicard that introduced sodium salicylate in solution for the treatment of varicose veins, observing that it was less caustic than the carbonate. It is to him that goes the credit of popularizing the salicylate treatment of varicose veins in France, Austria, England and Sweden. He has since reported 325,000 cases without a single infarction. Two cases, non-fatal, of pulmonary infarction have been reported by Meisen, of Copenhagen, in 2000 cases.

Many other solutions have been used with more or less untoward results, as quinine urethane, mercuric cyanide, metaphen, calorose, mercury bichloride, sodium citrate, iodine 30 per cent tincture and iodine as Pregel's solution and others.

At the present time the most widely used solutions probably are glucose in 50 per cent solution, sodium chloride 15 to 30 per cent solution and a mixture of equal parts of 30 per cent sodium chloride and 50 per cent dextrose solution, quinine urethane solution, sodium salicylate solution 25 per cent to 40 per cent.

The amount to inject of these solutions depends largely upon the size of the varicosity to be injected. Usually from 1 to 10 10 cc. with seldom more than 20 to 30 cc. at one sitting is used. This is especially true of sodium chloride—30 per cent, which the author has used extensively. Some advise that sodium chloride in 20 to 30 per cent solution can be used to the



amount of 50 to 60 cc. at a sitting, but this seems a large dose.

Sicard used ascending strengths and amounts of sodium salicylate ranging from 20 to 40 per cent with 3 grams as the maximum dose and the usual amounts 3 to 5 cc. at a sitting.

Glucose solution 50 to 60 per cent carries an average dosage of 5 to 20 cc. Quinine urethane solution consists of 4 grains of quinine hydrochloride, 4 grains urethane and 3 cc. distilled water. Its dose should not exceed 4 cc. at a sitting.

There is a very promising solution now being used consisting of equal parts 50 per cent glucose solution and 30 per cent sodium chloride. This solution will prove very popular, I believe, since its sloughing properties are at a minimum.

#### APPARATUS

The apparatus necessary for injecting varicose veins is simple.

Some writers have special tables and means to facilitate the accessibility of the varicosities and procuring proper posture of the patient because both are very essential to procuring satisfactory results.

A common office operating table, with the end turned down, is sufficient. The patient stands on a small foot stool at the end of the table and the injection is made.

The syringe most suitable is a common glass, Luer type or Luer Lok, with a slip on or Luer Lok needle or 22 to 26 gauge, the larger for the more viscid solutions and the 26 gauge for the less viscid solutions. The needle should have a short bevel and be 1-2 inch in length. A good loosely working syringe and a sharp needle is very essential for procuring the best results. A tourniquet should be at hand to facilitate the distention of the veins, if necessary. There is used by some a ring like instrument, 3 by 1½ inches that isolates a segment of the vein, thus facilitating the concentration of the solution in the segment desired. It is called a veri-occluder. A good light without shadows is essential. Natural northern light is preferable.

#### TECHNIQUE

The technique of injection is by far the most essential of all procedures. A poor technique means poor, and a great many times disastrous results.

As stated, above, the ordinary office

operating table can be used by allowing the patient to stand at its foot with the lower section turned down. A small foot stool should be placed so the patient can stand on it and sit upon the table with ease when the injection is to be made, thus allowing the emptying, to a certain extent, of the distended veins and in turn get a maximum intravenous concentration of the solution. The skin should be cleansed with alcohol and not a colored solution. McPeters and Rice and others, having proven by fluoroscopic demonstration that usually the flow of blood in varicose veins is distal and not cephalad, the site of injection should be selected at a high point so the solution will gravitate downward, thus obliterating as much vein as possible. When the needle is inserted and blood is freely aspirated, the patient is allowed to sit down (not lie down) and if the veins are not sufficiently collapsed the lower section of the table can be raised, very carefully placing the limb in a horizontal position.

If a careful technique is followed the veins many times can be evacuated by stripping and blocking by the fingers of an assistant. Extreme care should be exercised that the puncture site be not disturbed, lest the posterior wall of the vein be punctured, the wall be torn or the needle slip from it.

The solution should be injected slowly, occasionally aspirating blood into the syringe. The rate of injection should be about 1 cc. per 15 seconds for the average solution. Faster than this gives more cramp-like pain and movement of the patient and probably a spill into the tissues. As the veins become thrombosed, the sites of injection can be brought downward, leaving the veins around the ankle last because frequently when reached they are already thrombosed. Four to six inches and sometimes more can be well thrombosed with the average 5 to 1 cc. injection. Quinine urethane should not exceed 4 cc. at a sitting. If pressure seems to retard the progress of the syringe plunger too much force should not be exerted as the vein might burst or get a spill back through the needle puncture.

The injection should be about every 5 to 6 days as the amount of thrombosis can be determined by that time. The number of injections of salt solution usually range from 2 to 3 at one sitting. As high as 60 cc. of 20 per cent sodium chloride

has been injected at one sitting by McPheters and Rice with no untoward effects except thirst, warmth and slight faintness. Usually one injection for small veins and up to four or five for larger veins is all that is necessary.

After injection a small compression pad of gauze is placed over the puncture wound and held tightly by a strip of adhesive or a spiral elastic bandage that is worn for 48 hours and then removed.

The greatest pitfall of a poor technique is a spill with a resulting slough, which takes from 1 to 3 months to heal, but, needless to say, the vein at that particular point is destroyed.

The test for efficiency of the deep veins have been left to the last of this section on technique, because it should receive considerable recognition before a case should be treated.

The most simple of all the tests consists of bandaging the limb with a spiral bandage and allowing the patient to walk vigorously for 10 minutes. If there is no discomfort or cramps with the superficial veins closed by the bandage it is evident that the deep veins are sufficient to carry the blood upward and into the circulation.

Trendelenberg's test is very reliable. It is done as follows: The limb is elevated, emptying the varices. The proximal end of the great saphenous vein below Poupart's ligament is then compressed firmly. The limb is lowered and the patient allowed to stand. If the superficial veins fill slowly and fill further with a gush when the pressure is released, the test is positive for insufficiency of the valves of the saphenous vein. If the veins immediately fill upon standing and if upon relieving the pressure a sudden further sudden filling of the saphenous vein is evident, the test is doubly positive or Trendelenberg double. This type of vein should be injected with caution as recurrences are common.

A negative test results when the veins fill very slowly during compression and do not suddenly fill upon relieving pressure. This demonstrates the efficiency of the valves in the saphenous system, as well as the anastomotic valves. Other tests have been advocated but these are the most practical. If in Trendelenberg's test the saphenous veins fill quickly, it is logical to conclude that the deep valves are not functioning.

## PATHOLOGY

Pulmonary embolus was until late years the greatly discussed and believed danger in injecting varicose veins. The direction of flow was thought to be cephalad, but McPheters and Rice of Milwaukee, as well as Schmier of Brooklyn have proven that is not the case and that it is downward in the superficial system, especially when varicosities are present.

Greensfelder and Hiller of Chicago proved that intravenous injection of sodium chloride caused a chemical thrombosis with a destruction of the intima and an endo and a peri phlebitis resulting. Fourteen days after injection the thrombus was well organized and canalization was taking place. No intima could be seen.

Glucose solution did not prove to be so irritating and the results were not so promising.

Rubeman and Douthwaite had similar experiences. This illustrates that more irritating solutions than glucose alone should be used. The sodium chloride forms a more firmly attached thrombus with more changes in the elastic tissues of the vein. This thrombus adheres tightly to the wall of the vein in considerable areas, thus preventing embolus formation. Organization soon takes place with productive inflammation and new blood vessels along with connective tissue generation. This process changes the veins to fibrous cords. These cords are somewhat tender from two to three weeks and gradually become smaller and scarcely palpable in from one to three months.

A perivenitis occasionally results, embedding the vein in a fibrous sheath but becomes practically all absorbed in due course of time.

The greatest danger is a spilling of the injected solution, especially sodium chloride and sodium salicylate, thus producing a slough. These are slow healing after a stubborn separation of the dead tissue from the healthy tissue. The healing process usually takes 8 to 12 weeks. This danger can be very greatly avoided by using combinations of glucose and sodium chloride.

## CONTRAINDICATIONS

The contraindications were thought to be more numerous at first than now.

The question to be decided especially, is



the deep venous circulation sufficient to carry the blood when the superficial veins are occluded. This question can be reasonably accurately determined by the bandage test and the Trendelenberg test.

Phlegmasia alba dolens or milk leg, known to all medical men is a certain contraindication. This though, many times, need not prevent treatment, if the tests are positive for adequate return flow in the deep veins. Acute phlebitis is a contraindication since 7 cases in 54,000 have been reported to produce emboli.

Arteriosclerosis, senility and myocardial disease come in for their share of consideration. Pregnancy is usually considered a contraindication but where the veins are very extensive and the correct solution selected, it does not prohibit injections. Quinine solutions should, for obvious reasons, not be used.

Others may be listed as follows: typhoid thrombosis, edema of ankles, if marked, extreme age, as 65 or above and various acute illnesses. Hypertension, if careful consideration is given, should not be a grave contraindication. Diabetics and alcoholics can, with careful management, be treated.

#### VARICOSE ULCERS

Advanced cases of varicose veins, as we all know, produce a stagnation of venous blood in the tissues which in turn produces an ulcer. These are most common in the lower internal tibial region and below and behind the internal malleoli.

With great care the veins can usually be found near the ulcer and very carefully injected. If the tissues are very hard the veins will not be palpated as usually felt but will be grooves in the tissue. A site for injection must not be selected nearer than  $\frac{1}{2}$  to  $\frac{3}{4}$  inch from the rim of the ulcer because the veins are so very thin that a rupture or spilling may cause a slough, followed by another ulcer which will complicate matters. This has a depressing effect upon the patient as he is looking forward to a reduction of ulcer area instead of getting more. A finding of these veins when they are large and covered with indurated tissue requires some experience. When these veins are injected correctly it is unusual how soon with no

other treatment other than plain vaseline they will begin to fill in and heal.

Ulcers present one of the greatest problems we have to face in the treatment of varicose veins, especially in the aged and neglected cases. They have usually tried all methods from quackery to the hokus pokus salves. By this time the patient will usually be satisfied to cooperate in practically any way to get the ulcers healed. Supportive treatment to the veins of the legs is sometimes necessary in conjunction with the injection treatment, especially in the advanced ulcer case. These supportive measures are commonly known as Unna's boot and the various elastic supports on the market. Sometimes rest in bed is imperative, in the most advanced cases.

#### ECEZMA

Eczema is a complication equally as important and usually as difficult to combat as ulcers. It is more often of the moist type and a very painful and annoying condition. It usually involves the lower third of the tibio fibular region and usually corresponding to the ulcer area.

The treatment of this condition should be in the realm of the dermatologist who has quite good success in relieving the patient. The fact that an eeczma is present does not prevent injection treatment being carried out and will be an aid in the clearing up of the eeczma. It is sometimes difficult to convince the patient that the injection treatment should be followed at the same time the eczema is being treated.

#### CONCLUSIONS

1. It is a safe procedure if proper consideration and technique is followed.
2. It is more convenient and less expensive to the patient than surgical intervention.
3. It offers a solution to the problem of the bad risk patient who has varicose veins.
4. Cases may be ambulatory during the treatment.
5. It is a beneficial factor in healing obstinate ulcer cases as well as eczematous cases that have been of long standing.

# STRICTURE OF THE URETHRA\*

O. R. GREGG, M.D.  
ENID

With your permission, I am about to begin this paper in reverse, *ie.*, I am going to give you the summary first.

I want to call to your attention that:

1. Congenital strictures do occur and give distress.

2. That the pathology of inflammatory stricture is hypertrophic, while that caused by trauma is atrophic; and treatment that is beneficial to one, is harmful to the other.

3. Luetic obstructions are frequently present, easily diagnosed, and easily treated.

4. That T. B. strictures though rare, are always secondary lesions; should be palliated, and under no circumstances operated upon.

5. That it is the opinion of the author, that senile strictures do exist and are caused by degenerative changes, incident to old age.

A stricture is a narrowing of an elastic tube.

## CLASSIFICATION

Spasmodic

Organic	{	Congenital	{	Inflammatory
		Acquired		Traumatic
				Inflam-Traum
				Luetic
				T. B.
				Senile

Let me briefly call your attention to *spasmodic strictures*, which are not strictures, but a spasmodic contraction of the compressor urethra muscle. This is very much a nervous condition, as there is no real pathology in the urethra. It occurs in both men and women and in children.

Surgical operations, outbursts of temper, confinement, shock, painful urethritis, frequently produce this symptom.

*Diagnosis.* Simply an inability to pass urine. Anaesthesia always obliterates the obstruction.

*Treatment.* Remove the irritating cause if possible. Heat, and sedative will relieve, and extreme stretching with large sound

or Kollman dilator many times produces a cure.

*Congenital.* We are born with these. They occur in both male and female, children and adults. They may be bands of adhesions that reach across the lumen of the urethra, or they may be vavles with various shaped pockets, and frequently the condition is a simple abnormal narrowing of the canal. The meatus and the fossa navicularis is the most frequent site of these congenital strictures, although they may be found anywhere along the floor of the canal. Nervous disorders, epilepsy, irritability of temper and underweight are frequently caused by this condition. Patients seldom notice an obstruction to the urine, even when the meatus has only a pin point opening. Let me briefly cite a typical case.

Minister, age 45, two children; healthy as a child. "Flu" 1918, light form, the only disease. Tonsils removed, teeth good. Complains of having to arise two to four times at night to urinate. Very nervous, irritable. Notices discomfort in bladder particularly when riding. Inability to concentrate mentally as he should. Prostate normal in size, milky fluid expressed that was negative. Urinalysis 1.024; sp. gr. slight acid, albumen negative, sugar negative, diacetic negative, indican negative. Pin point meatus, able to pass only a small probe. Did a meatotomy also, found a very narrowed condition just posterior of fossa navicularis. This I also cut and passed a 22 sound and later raised to 26. Patient tells me he does not have to arise at night. He gained 15 pounds in weight. He has no bladder distress on riding and his mental capacity and disposition show vast improvement.

This is a typical case that I have treated since the first of the year. I could give you many more.

Of the *acquired* group by far the greatest number is to be found in the inflammatory classification. Keyes states that gonorrhea is the cause of all inflammatory strictures. The pathology is interesting. As you know the urethra is a hollow elastic tube. Due to repeated gonorrheal inflammations, there is a proliferation of round cells in the submucosa. These cells are slowly replaced by fibrous connec-

\*Read before the Surgical Section Oklahoma State Medical Association Annual Meeting, Oklahoma City, May 11, 12, 13, 1931.



tive tissue, that hardens as it becomes older. It is this bulging of surplus fibrous tissue that narrows the lumen and makes up the stricture mass you are able to palpate. As this fibrous proliferation ages, it also shrinks. Rusche states there is always an inflammatory exudate that increases bulk and adds density to this fibrous mass. Again let me repeat that there is great thickening and hypertrophy of the urethral walls, in these inflammatory strictures.

Now *traumatic stricture* is a "horse of an entirely different color." Here we have a break in the continuity of the tissue, by force (generally a hard pointed instrument in the hands of a careless doctor) or it may be chemicals have lacerated the tissue. Like any other wound the tear is filled with blood clot and serum; this becomes organized and a scar (fibrous tissues) result, that connects the two normal tissue. Like all scar tissue, it is the shrinking and distortion, that produces stricture.

In *inflammatory strictures*, we have a hypertrophied mass; a proliferation of tissue. The urethra is thicker here than at any other place, while in traumatic condition, we have a thin scar, that has shrunk and pulled and distorted the surface, making stricture. The stricture here is the thinnest part of the wall. Just the opposite of the inflammatory condition. No mass here. If there is a mass, it is inflammatory and not traumatic. Both are fibrous tissue, I grant, but one is a hard thickened massive wall, while the other is a hard extremely thin wall.

I want to say at this time that you will never appreciate the difference between traumatic and inflammatory strictures, until you have dissected two or three of each kind. Then a blind man can tell the difference, because all you have to do is to feel.

*Treatment:* In the inflammatory type of thickened wall, this can be gradually stretched. It is fibrous tissue, but it is so thick that you cannot tear it *if you are half-way careful*. What happens when you attempt to stretch the traumatic stricture? It is so thin it won't stand the pressure and a break results.

Guyon, many years ago, taught that the sound not only stretched the proliferation of stricture tissue, but the massage in

passing the instrument, served to cause an atrophy of the fibrous mass.

If the stricture is of filiform calibre two methods are at your disposal. First, (and in my opinion it is the better way,) with greatest of care and patience, insert the filiform and keep in place with adhesive, from twelve to thirty-six hours. In inflammatory strictures, enough dilatation will be produced so that it is possible to pass an 8 or 20F, when metal sounds may be safely used.

The second method after the filiform is passed, is to screw on a Phillip's bougie to the filiform, pushing the filiform into the bladder as a guide, then partially withdraw and use the next number screw-on bougie. If there is no difficulty in passing the filiform, the whip flexible bougie is the instrument of choice, as there is no rigid screw on connection, and no trauma whatever, when this instrument is used. However, with the modern Phillip's, the screw is very small, making very little angulation and little difficulty in passing.

In regard to the LeFort sound and guide it is similar to the Phillip's, except the follow up is a metal sound rather than a flexible bougie. Because of the extreme angulation made by the "screw-on" I consider this a cruel instrument. The probabilities are that damage will result, and a simple inflammatory stricture be converted into an infla-traumatic type. I can see no possible reason for using this instrument, when we have the whip and the Phillip's.

In passing filiform strictures an abundance of patience is required. If fluid can be injected from outside into the bladder, or if the patient can express a few drops of urine, a filiform can be passed, and this comprises practically all strictures.

Injecting a small amount of novocain into the urethra is a wonderful aid in passing the filiform. It has the disadvantage of deadening the sense of feeling and the patient is not able to tell you when you are in the pocket rather than the canal; however with a proper technic your sense of touch will tell you much more than the patient, and the relaxation off sets this disadvantage.

To treat strictures, it is necessary to have a good assortment of instruments.

Now the *traumatic type*. This is thin scar tissue and every time an attempt is made to dilate, a tear is made, and insult

is added to injury. Certainly, relief will be given by using the sounds. You have torn the canal in enough places to enlarge the calibre, but in a few days they are again contracted and the patient worse than before. Why make a lot of scars where you don't want them, when you can so easily make a large clean-cut scar where you do want it. It is on the same principle that the obstetrician does episiotomy. The urethrotomy must be kept open and dilated with sounds, so that the scar will not contract, and you have a narrow scar when a wide scar is desired.

Text books are full of advice that tell us to do internal urethrotomy on anterior strictures, and external urethrotomy on posterior. I think the principal reason for this advice is; that they are able to devote several pages describing elaborate operations, and confusing mental pictures that might otherwise be simple and clear. Let me call your attention that there are no traumatic strictures in the prostatic urethra. If prostatic strictures are found, they are either luetic or T. B. It is amazing how many good men have learned this fact by a sad experience.

Formerly, I did external urethrotomy on all posterior strictures, Now I very seldom do an external urethrotomy. The convalescence is so much shorter, as is the period of hospitalization, I find it worth while to take the chance, the text books to the contrary, notwithstanding. Hemorrhage is the disadvantage, but with the use of modern coagulants, and by placing a very large catheter in place, I see no reason why this cannot be controlled.

The *instruments*, whatever you like best. I prefer the Otis urethrotome, however, I occasionally use the Maisonneuve instrument with a filiform stricture.

The *infla-traumatic* type is a mixture. Here we have a hypertrophied fibrous mass punched full of holes and lacerated by some amateur, who is anxious to do something. An act of Congress forbidding the manufacture of sounds below 20F would prevent all of these. On dissecting out the lesion, you find the ordinary mass of thick fibrous tissue with areas of thin scar tissue, many times as thin as paper, where a false opening has been made. Unless you know that scar tissue is the larger part of the mass, try gentle dilatation. If it doesn't work, do a thorough urethrotomy.

This mixture of pathology is avoidable, unexcusable, and criminal.

*Luetic Strictures.* While not common are not infrequent. I have seen them more frequently in women than in men. There is hypertrophy of the urethral walls, particularly of the mucosa; there is great distortion and contraction. Because of this, one naturally thinks he has a terrible mass of scar tissue, but give a couple injections of neo and see it melt away.

*Tubercular Strictures* are rare, but occasionally one finds them. Not only is the stricture mass hard and unyielding, but the entire urethra is so hard it feels like a slate pencil. The pain is entirely out of proportion. Even attempting to pass the smallest instrument causes pain that is unendurable. Painful frequent urination, particularly at night, with a very acid urine is a red thread symptom. The lesion of the urethra is always secondary, and it is probable that the kidney, bladder, vesicle, or testicle is involved.

As to treatment; do as little as you can. Palliate; do not try to operate this condition, or you'll be sorry. The wound never heals, and you've made a bad matter worse. I do not hesitate to do a cystotomy. This affords the patient much greater relief than instrumentation of the urethra.

*Senile Strictures.* There seems to be a stricture due simply to senile changes. I have observed five cases that I thought were purely senile, four in women and one in a male. All were past seventy. I could find no history of previous discomfort, or frequent urination.

Gradual dilatation relieved the condition.

I have never had the pleasure of autopsying one of these cases, so regarding the pathology I can only give you the opinion of others. Herman who was first to report these strictures of old age, thought that the pathology lay in hypertrophy of the urethral wall. Wynne agreed, while Kleinwachter and Fischer believed that the elastic fibers and muscles atrophied, and were replaced by fibrous tissue.

I do not know, and until there is more observation, I doubt if anyone else knows. I do know that you have the hang of the stricture, and sounds relieve.

The *results of stricture* are very much the same regardless of cause; frequent and painful urination, decrease in size and force of the stream, gleet, various



nervous disorders, cystitis, pyelitis, hydronephrosis, extravasation of urine into the scrotum and adjacent parts, and resulting gangrene.

*Prognosis.* With the exception of luetic lesions, I think we are still safe in saying, "Once a stricture always a stricture," and they must be relieved from year to year.

Permit me to conclude this paper by asking you a question. Why do hypertrophy of the prostate and stricture of the urethra never co-exist?

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DISCUSSION: *Dr. Bransford Lewis*, St. Louis, Mo.

I did not expect to talk on this subject, but nevertheless, I have learned enough to talk about something from this splendid paper which we have just heard. The doctor has given us an excellent review of the subject of urethral strictures. There have been masses and masses of medical literature on strictures and no one ever gets through talking about the subject. It was Otis who awakened the profession some 30 years ago. He said that every male urethra had several calibers, and one should know the different calibers of the urethra, at the different anatomical locations. He made a standard for us to go by. One should examine and should be able to recognize these normal physiological anatomical narrowings at the meatus. Otis however went to the extreme, cutting widely on a urethra, which certainly did not conform to the standard. He just went too far and cut too widely. The profession gradually learned that it was not good to follow his teachings and took a more conservative stand. They adopted the methods of using the steel sounds and others which enlarged the caliber of the pathological constrictions. The normal American man will not take care of himself. He gets better and leaves you, and then when trouble begins, he returns and we have to go through the same gradual enlargement of the urethra again.

*Strictures in Women:* This is a feature of this subject which is rather neglected. Last week, I had a stricture of the urethra in a woman who had been a subject of severe pain in the left kidney and it had been present since last October, except for about a week last Christmas. She had been X-rayed for stone in the kidney and nothing was found. Since 1913, I have been observing cases of renal colic, coming not from stone, not from stricture of the ure-

ter, and not from anything that you could recognize but in about two dozen cases there was obstruction of the urinary channel in the neck of the bladder. That obstruction produces backward pressure. We dilated the urethra in the above case and the woman was relieved of the pain in the left kidney. Contraction in the neck of the bladder in the male, in the urethra in the female, may produce a reflex of pain. The effects of obstruction, whether in a man or woman can be the same.

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*Dr. Clinton K. Smith*, Kansas City, Mo.

I have enjoyed the splendid paper of Dr. Gregg, and he has certainly taken a common, every day condition and made a splendid, important essay out of it. I am sure that the average patient does not realize the importance of a stricture of the urethra, and sometimes, I wonder whether the doctor realizes the importance. Just because the patient is able to urinate, he usually thinks that he is getting along splendidly and we in turn as doctors let the patient go. With a urethral obstruction, it is evident that toxic absorption has been going on, because of back pressure. We should examine these patients and find out whether they have inflamed and enlarged prostates. I believe that I have nothing to add to this splendid paper.

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*Dr. W. J. Wallace*, Oklahoma City.

Stricture is much more serious than we realize, than the people realize or the profession realizes. It must be treated heroically, more so than in the past. Dr. Gregg stated in his splendid paper—"once a stricture, always a stricture." In my opinion, a real stricture will remain. How long will it take to cure the stricture? The patient will always have to have treatment more or less the rest of his life. We can dilate oftentimes to 30 and it will retract. Patients should be told that they must go at definite times and have this condition attended to. We have strictures of large sizes and of moderately large sizes which give trouble and which are overlooked. Often times we will pass a number 24 sound and think that the man is all right. I have experienced trouble in passing a number 28 French, and it has met a hard, sclerotic obstruction. We very often find a diverticulum beyond the verumontanum. I try to teach my students to carry the sound on up, until a No. 30 will

pass into and throughout the entire urethra. A normal man should admit a size 30 French without much pain and without making him bleed.

As to back pressure—the pains assimilate urethral colic. We must not think of stricture as a local condition, but as a general systemic condition. Stricture is a serious condition, and should be treated as such. Do not fail to use a sound. I believe in the “sound.”

#### *Dr. Otis:*

I wish to stress the point that we must not forget the prostate. I was interested in the congenital stricture, and I think we have more congenital strictures, than we know about. Just last week, I had a three year old boy in the office, who had some difficulty all his life with a frequent, difficult urination. He had been seen by various doctors, and when I attempted to catheterize him, I found that he had a stricture of the urethra. He was carrying 10 ounces of residual urine in the bladder. After releasing the urine and putting in a retention catheter, he went through the same physiological upset as a prostatic case would. The little fellow was thin, nervous, anemic and run down.

In regards to the female urethral stricture. I don't think that we emphasize this condition sufficiently. I think that women have it more commonly than we suspect. Female children have urethritis. The urethra is subjected to the menstrual discharges and later on the trauma of childbirth. I have noticed that after I have done a cystoscopy on a woman, that in a day or so, she will come to the office and say “doctor, I feel relieved from my distress.” I believe that what we have done, is that we have relieved a stricture of the urethra in the female. We cure 25 to 50% of cases of stricture of the urethra in women without knowing it. I want to compliment Dr. Gregg on his interesting paper.

#### TEACHING OF MEDICINE

Ralph H. Major, Kansas City, Kan. (Journal A. M. A., April 27, 1929), in a paper read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Feb. 18, 1929, says that a physician should be not only a doctor but an educated man, and that the standing of the profession will suffer if we turn out a lot of doctors who have galloped through the college and medical course. The degree of M.D. should indicate a certain educational and intellectual status. It means that the possessor of this degree has slow-

ly and often painfully trudged up the difficult and winding path of knowledge until he has reached a certain summit—not that he has taken the funicular and arrived there in half an hour. Major says that he tries to teach the student the technic of taking a history, making a physical examination, carrying out the simpler laboratory tests and then, after these details have been mastered, of proceeding to the diagnosis and treatment. The physician should first know the symptoms manifested by a patient even if the diagnosis is not apparent, for once he is sure of his observations he can, by reference to his books, usually make a correct diagnosis even when the disease is one of which he has not even heard. Medicine is not learned by diligent cramming over the midnight oil but by what one might term the “episodic method”—teaching of medicine as a series of episodes, at first perhaps unrelated, but later assuming the appearance of a connected story, or a well rounded experience as the episodes multiply. There is no doubt that medical students, like many physicians, attach undue importance to the laboratory. While we stress clinical instruction in medicine, if necessary, to the partial curtailment of didactic courses, we believe the latter have a limited but definite place in the medical curriculum. The question of the proper textbooks in medicine is a constantly recurring one, and to both student and teacher a very complex and often perplexing problem. Medical books are to be used as reference works and not as repositories of medical dogma which must be memorized and defended like the catechism. An effort is made to show that the clinical picture of a certain patient is the thing to fasten first in one's mind, and then one's knowledge may be extended by reading the composite picture of this disease presented in the textbook and noting wherein the condition of this particular patient resembles the usual picture and wherein it differs. Students should be encouraged to read good medical biographies. This historical method has a great teaching value. One lesson to impress on the student is that the patient consults him because of pain or discomfort, and that if a cardiac patient is seen in the late afternoon it is more important at that time to give the patient a comfortable night's sleep than to learn whether he has a mitral stenosis or an aortic insufficiency.

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# MALTA FEVER

R. C. SULLIVAN, M.D.  
ARDMORE

Malta fever, also called Mediterranean fever, undulant fever, Neopolitan fever, Rock fever, Gibraltar fever and Goat fever is an endemic infectious disease, characterized by an irregular intermittent fever, profuse sweats, arthritis, enlarged spleen and a tendency to relapse. It is transmitted almost exclusively through the milk of goats, in which the organism is excreted. It has been obtained from human, bovine, caprine, porcine and equine sources. It is caused by a coccobacillus, *Brucella melitensis*, which may be isolated from the spleen, blood or urine. *Brucella melitensis* can be differentiated from *Brucella abortus*, the cause of contagious abortion in cattle, only by absorption of agglutinin tests, so that it seems logical to consider the organisms as belonging to the same species.

Cases of Malta fever have been reported in places where goat's milk was not a factor and the organisms were found to be of the *abortus* variety, so that it seems that cases may arise from drinking milk from cows infected with *abortus* variety, although such a source has not been definitely proven. Occasional cases have been reported which were thought to depend on infection through domestic animals, as the handling of puppies from a dog which had aborted.

The typical case runs a course of three or four months or longer, and the mortality rarely exceeds two per cent.

**Epidemiology.** In man the most important mode of excretion of the organism is by the way of the urine. Kennedy found *Brucella melitensis* in about 10 per cent of the urines of patients examined. It is possible that excretion takes place through the feces, but this is rather conjectural. Lactation is rare in women with malta fever, but in a few cases in which milk of such cases, the organism has, as a rule, been recovered. In addition the organism is frequently present in the blood, blood cultures having been positive in 65 per cent of Eyre's cases. All evidence of transmission by blood-sucking insects or arachnoids is practically negative.

Notwithstanding the frequent elimina-

tion of the organisms through the urine, it would seem necessary to dismiss such a means of transmission as other than extremely rare, because infections of the attendants of the hundreds of cases treated in military hospitals of England were practically never observed. There does not seem to be a human carrier problem in this disease. All evidence since the publication of the reports of the Malta Fever Commission (1905-1907) goes to sustain the view that the conclusions of this commission are correct, that the drinking of raw goat's milk is the paramount source of infection. In the investigation of this commission it was found that Maltese goats could be infected by food contaminated with *Brucella melitensis*. It was also found that many goats showed a natural infection.

The months of June, July and August give the greatest incidence of the disease. This is explained, not only by the greater use of milk during the summer months, but also by the fact that following the birth of the kid in the spring, the contamination of the milk is more marked.

Monkeys are very susceptible to this disease. By feeding twenty-eight animals as an experiment with infected milk, twenty-six of them developed Malta fever. The disease in the infected area of Texas is also known as "dust fever," this designation coming from the idea of infection taking place in the dust filled goat pens.

**Pathology.** Our knowledge of the pathology is not very exact, due to the lack of autopsy material, and also the great variation in the course of the disease. Careful autopsy studies would indicate that there is no particular tissue or organ peculiarly selected by the causative organism or its toxins, and this fact probably accounts for the variation in findings. The most important fact in the pathology is that the disease is a bacteremia, which fact may be practically demonstrated by blood cultures made during the febrile attacks. There also seems to be a degenerative action upon the red blood cells and a lowering of the phagocytic activity of the leucocytes.

Probably the most constant finding at autopsy is the more or less enlarged spleen. In acute cases the spleen is large and soft and dark, much congested and weighing up to 200 grams. In chronic cases it is quite large and Bassitt Smith has reported a case weighing 1200 grams. The liver and kidney are congested. There is no ulceration of Pyer's patches. At times we may find enlargement of the mesenteric glands and from them get pure cultures of the causative organism as well as from the spleen.

*History.* Hippocrates described cases of protracted fever with relapse tendencies. It is probable that such cases were Malta fever. Following the Crimean war in 1863, there was quite an incidence of fevers in Malta, and the following year the first detailed description of the disease made by Marston under the designation "Mediterranean Remittant Fever." In 1886 Bruce isolated a coccoid organism from the spleen which he called micrococcus melitensis and was able with cultures of this organism to transmit the disease to monkeys.

*Complications.* As complications, we have pneumonia, orchitis and more serious and more common, hyperpyrexia and heart failure. Epistaxis is not uncommon; we may rarely encounter cases with extensive hemorrhage into the skin and mucus membranes and hematuria. Anemia is the most common sequella. Also the long continued illness that it produces tends to bring about a neurasthenic state.

*Treatment.* This is symptomatic and supportive and somewhat on the lines of that of typhoid. People living in the infected regions should not use the milk of goats; or else, if no other is available, it should be boiled. Infected goats should be killed. The best results in treatment have been in the use of vaccines, this being confined, however, to cases of a chronic type, for in acute conditions they may do harm. The autogenous vaccines have had greater success than the regular stock vaccines.

*Prognosis.* About two per cent is the usual mortality rate. It is usually considered that a lasting immunity is conferred by an attack, but cases are on record of a second infection.

*Diagnosis.* Of the diseases which resemble Malta fever, typhoid and paratyphoid fevers are mentioned first. The main differential point is that Malta fever does not produce the toxemia that the

typhoid group does. The sweating and daily remissions of fever suggest malaria, especially the malignant tertian type. Some cases resemble pulmonary tuberculosis, some resemble amebic abscess of the liver. Blood examinations, blood cultures, the agglutination tests, sputum examinations, etc., of course, make the final differential diagnosis.

The symptomatology is being omitted and a case report substituted since it is quite typically a text book picture:

*Patient.* J. G. J., Ardmore, Okla. Age 25 years, male, married. Occupation, boiler worker.

*Family History.* Father living and well, age 62. Mother living and well, age 61. Six brothers all living and well. Two sisters living and well.

*Chief Complaint.* Weakness, loss of weight, fever, sweats, pains in the lower back and swollen and painful testicles.

*Present illness.* About October 1, 1930, early in the morning he had a feeling as if he needed a cleaning out, so he went down to the drug store and bought a course of purgative medicine and took all of it. The purgative was quite thorough, but it did not relieve him of his complaint. Growing worse all the time, in a few days he called in a doctor who examined him quite carefully and made a provisional diagnosis of Malta fever. This diagnosis was verified by the Arizona State Public Health Laboratory, the U. S. Veterans' Hospital at Tuscon and by a laboratory in Phoenix.

Fever was present from the very beginning. Early in the morning each day he would feel pretty good, but by 11 o'clock he would become fagged out and have to go back to bed. The morning temperature would usually be down about normal but in the afternoon it would be 101 to 103 Farh.

Three weeks from the onset he began having aching rheumatic like pains across the shoulders and down the back. These pains and aches remained more or less constant throughout the course of the illness.

During the eighth week of the illness both testicles began to swell and ache. The right side became affected first and three or four days later the left side. The condition in the right soon subsided but the left got worse and necessitated a hos-



pital stay of two weeks, during which time the swelling left the left testicle but the pain had not entirely gone.

About Christmas time the fever came to normal and remained so for four days. This is the only period of time that the temperature remained normal for any length of time during the entire illness. The highest the fever had reached was 104 degrees. Almost every night since the onset he had had a profuse night sweat. This perspiration had a very fetid odor, different to any sweat odor known.

The appetite was good and had been throughout, though there was a gradual loss in weight reaching 35 pounds. The bowels had been more or less undisturbed; there was no cough or respiratory symptoms.

*Past History.* Has had mumps and small pox, but not any of the other contagious diseases. Had typhoid fever at age of 14 and was sick eight weeks. Had no other serious illness; had never met with an accident; had never been operated on. Was born and reared in Oklahoma, moved to California seven years ago and engaged in oil field work. Came to Tuscon, Arizona, in May 1930, and worked for a short time as bookkeeper for a transfer company, then took up a homestead eleven and one-half miles from Tuscon. While in Tuscon he used raw goat's milk. His wife and two brothers were living with him and drank of the same raw goats' milk. The wife fell sick. The symptoms were similar to those the husband had later, but the attack was milder and she was well in five weeks. There were no other cases of Malta fever around Tuscon that summer. He left the hospital in Tuscon and came here to his father's home in Ardmore, December 23, 1930.

*Physical Examination.* There is a marked pallor of the skin and mucus membrane. Temperature 101.8 F., pulse 120, respiration 20. The slightest exertion causes an increase in the pulse and respiration. There is no edema present; liver is palpable about three fingers below the costal arch; spleen is palpable; left testicle is swollen, indurated and very tender. None of the superficial glands are enlarged. Weight is 138 pounds.

#### BLOOD COUNT

Hemoglobin .....	75%
R. B. C. ....	5,150,000
W. B. C. ....	12,800
Polys .....	59%
Lymphs .....	41%

*Urine.* Heavy albumen; loaded with pus.

*Progress and treatment.* His previous treatment was continued; that is, salicylates, rest, diet, elimination, etc. Several attempts were made to get cultures from the urine and from the blood, but a positive growth could not be obtained. The agglutination test still remained positive. *Brucella melitensis* fever curve ran more or less constant, that is, normal or slightly subnormal each morning and 100 to 102 degrees Fahr. in the afternoon. The general condition of the patient seemed somewhat improved however. There was a slight gain in weight and in strength so that he could stay out of bed all of the day.

Finally, on February 2, 1931, he was given 4 minims of triple typhoid vaccine intravenously and ordered to bed. Two hours later he had a hard chill, the temperature rose to 105 degrees Fahr. and there were symptoms of aching, etc. This reaction lasted for three days. Since then there has been no return of fever; there has been a rapid gain in strength and an increase of 21 pounds in weight. The color is natural; the spleen and liver are no longer enlarged and patient is now able to do a full day's work.

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#### SYPHILIS AMONG STATE PRISONERS

L. L. Stanley, San Quentin, Calif. (Journal A. M. A., April 13, 1929), states that every prisoner who enters the California State Prison at San Quentin is given a thorough physical examination. This includes the Wassermann test for syphilis. Ten thousand men have undergone this examination from Jan. 1, 1918, to Jan. 1, 1926. Of this number, 8,004, or 80 per cent, were white; 530, or 5.3 per cent, were negroes; 1,265, or 12.65 per cent, were Mexicans, and 201, or 2 per cent, were yellow. The Wassermann reaction was as follows: Of 8,004 white persons, 578, or 7.2 per cent, reacted positively. Of 530 negroes, ninety-six, or 18.1 per cent, reacted positively. Of 1,265 Mexicans, 198, or 15.6 per cent reacted positively. Of the total number of 10,000, 921, or 9.21 per cent, reacted positively. Of the 10,000 prisoners, 1,507, or 15 per cent, gave a history of venereal sore which may have been chancre, chancroid, herpes or venereal wart. Of the 10,000 prisoners, 4,820, or 48.2 per cent, gave a history of gonorrhea which cannot well be mistaken. Of this number of prisoners, 36.58 per cent were married and 63.42 per cent were single.

# CESAREAN SECTION\*

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The purpose of this paper is to bring out the indications and contraindications for the performance of Cesarean section, in the hopes of being instrumental in avoiding, or at least diminishing the abuse of one of the most valuable life saving obstetric procedures for both mother and child. C. Jeff Miller in a recent address stated that, "It is one of the paradoxes and one of the tragedies of medicine that certain measures designed primarily as life saving and health giving should carry in their abuse death and invalidism. Originated for the salvation, first of the child and then of the mother, all too frequently it has become a death dealing agent for both. Cesarean section belongs to this group."

By cesarean section is meant the operation for the removal of the child from the uterus, through an incision in the abdominal and uterine walls. The term is restricted to the abdominal delivery of a child normally situated in the uterus and is not applied to operations for removal of the child from the belly cavity after rupture of the uterus or for the removal of the child from the abdominal cavity in cases of ectopic pregnancy. A short history of the operation will at this time not be amiss.

It was generally believed that Julius Caesar was brought into the world by this means, and that he obtained his name from this operation, *a cesa matris uteri*, but it is now almost certain that this is not correct, since his mother Julia lived many years after his birth, and at that time the operation was not performed on the living woman. Then too, Julius Caesar was not the first of his name, since Roman history tells us that a priest named Caesar lived at a considerably earlier period.

Another theory for the origin of the name is that the term is derived from the Latin verb *cedere* (to cut) and that the term implies delivery by means of cutting. While this explanation is possible, it is not very plausible, in view of the fact that in

715 B. C. Numa Pompilius, the King of Rome, codified the Roman Law, and in this *lex regia* a command went out that all women who died late in pregnancy have an abdominal section performed, in the first place to save the life of the child, and in the second place to assure a separate burial for both mother and child in the event of the latter's death. The *lex regia* became the *lex cesaria* under the rule of the emperors, and the operation became known as the cesarean operation. This seems to establish the antiquity of the operation on the dead.

The history of this operation on the living is, however, of more recent date, but its beginning is obscure. The true history of cesarean section covers four periods; first from the earliest beginning in 1500, during which period the operation was occasionally performed on women who had died during late pregnancy. During this period there is no evidence that the operation was performed on living women. Second, from 1500 to 1876: During this time the operation was occasionally performed on the living, when all other methods of delivery had failed, but the results were almost always fatal. It is claimed that a Jacob Nufer, a castrator of pigs, residing in Switzerland, performed this operation on his wife, when a number of midwives and barbers were unable to deliver her, and gave up the case as hopeless. Since this woman had five (5) spontaneous labors later, it is now believed that this was not a true cesarean section, but probably an operation for the removal of the child lying in the abdominal cavity outside the uterus. It seems that the first generally accepted cesarean section was performed on April 21st, 1610, by a surgeon, Jeremias Trautman, in Wittenberg, Germany, on a woman with hernia uteri.

In spite of the great mortality attending the operation it gradually gained foothold and no doubt through the attitude of the Catholic church, which favored the procedure, that it came more and more into prominence. There is good reason for this operation not becoming a very favor-

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able method of delivery, when we learn that Kayser of Copenhagen in 1844 reported a mortality of 62 per cent. Naegele showed a mortality of 64 per cent in Germany, and Harris in 1878 reported a maternal death rate of 52.2 per cent out of eighty (80) cases in the United States. In the third period from 1876 to 1907 we find a different situation, for this is the time when Porro of Pavia, advised the amputation of the body of the uterus, and fixation of the stump in the lower angle of the abdominal wound in order to overcome the well recognized dangers of hemorrhage, leakage of lochia into the abdominal cavity and subsequent infection. Prior to this, you will remember that the unsutured uterus was returned to the abdominal cavity after removal of the child. Naturally Porro's procedure was followed by most remarkable results, and the operation became very popular, but it was done at the sacrifice of a valuable organ, the uterus.

Then in 1882 Sanger revolutionized the operation by calling attention to the need of closing the uterus with sutures in order to avoid the danger from the open uterine wound. This naturally was a marvelous step forward and this operation then became known as the conservative, in contradistinction to the Porro, or radical cesarean section. Many modifications of both operations have been practiced, but time does not permit a review of this part of the history.

In 1907 a fourth period began when Frank of Cologne, realizing that the results of the conservative cesarean section were still unsatisfactory when done on women frankly infected or even in doubtful cases, advised and described a method of operation, which could be done extraperitoneally. While the early promises of this operation were not fulfilled, it was I think, responsible for numerous modifications and refinements, and led up to the operations of choice of our present time.

Aseptic surgery and improved surgical technique have greatly increased the success with which cesarean section can be performed, and have in turn led to the employment of this procedure many times as an operation to the exclusion of other methods of delivery, which might be better suited to the needs of the given case, and has therefore today become the most abused obstetric operation. It is performed by the neophyte, and even older men,

on patients who present no real indication for it, and under conditions which make it exceedingly dangerous.

As a general rule the poorly equipped obstetrician has more cesarean sections to his credit than has the well trained accoucheur. In preantiseptic days cesarean section was considered so dangerous that it was believed to be indicated only in cases in which delivery of even a mutilated child was not possible. But since the development of aseptic surgery, there seems to be a general impression in the minds of the public, as well as in the minds of the profession, that this is a perfectly safe operation and will always be followed by good results under all conditions. It must always be borne in mind that an abdominal operation is a major procedure and carries with it, a certain risk of life. Many women are today, subjected to this operation because these risks are ignored and because the attending physician either lacks the obstetrical skill to deliver the given case by the natural passage, or hasn't the patience to allow the case to deliver by the pelvic route. While we have for a long time recognized strict and definite indications for the performance of cesarean sections, these very strict indications are not always adhered to, nor is it always desirable to do so.

The only absolute indication for the operation is the existence of some pelvic obstruction, which renders delivery by the vagina, even of a dead or mutilated child impossible or at least so dangerous that the abdominal operation adds no greater risk for the mother than a delivery through the natural passages, and therefore, the surgeon who undertakes the performance of this operation for any other reason should be sure that the benefits which are to be expected from this operation for either mother or child will outweigh the certain increased risk connected with an abdominal delivery. Today we do not strictly adhere to this absolute indication, and at the present, it may be said that the indications for cesarean section include all conditions which so complicate labor as to seriously threaten the life or health of the mother or child, and although the operation carries with it some risk, this danger is comparatively small when the operation is done under proper conditions in experienced hands.

The mortality rate from cesarean section when done by skilled obstetricians

and men of good judgment is from 2 per cent to 4 per cent, but I almost fear to state the mortality percentage for cesarean sections of this country as done by all who have the courage to do this operation, or when done by those who possess the technical skill, but lack the obstetrical judgment. Holmes several years ago stated that when a surgeon showed more than 5 per cent maternal mortality for this operation, he should revise the indications for which he operates, and should subject his operative technique to the very closest scrutiny, since such mortality proved that he was either selecting the wrong kind of cases or operating under improper conditions, or that his aseptic technique was imperfect.

That this operation can be done safely in properly selected cases and under proper conditions is evidenced by the fact that several operators can show a series of 100 consecutive operations without a death. This does not seem such a marvelous feat today, for even as early as 1901, I was present and assisted at the one hundredth consecutive cesarean section which Leopold of Dresden performed without a maternal mortality. Such results can, however, be obtained only if the proper indications are present and if the correct technique is followed out. We find today a maternal mortality of 2 to 25 per cent and higher, and a fetal and infant mortality of 2 to 30 per cent. This represents, of course, cases which are available for inspection and study. But what about those cases that are done throughout the land of which we have no knowledge. And when we study the statistics of various hospitals, we find the mortality rate still extremely high. The minimum mortality is at least 2 per cent even when done as an elective procedure, and when every circumstance is favorable. There are reasons for this high mortality. Reckoning from beginning of labor pains the danger grows with each hour of the duration of labor. At first slowly, but gradually increasing. Morrison and Williams found that the mortality increased 1 per cent for every two hours of labor. That bad results follow repeated vaginal examinations is generally recognized, and yet, we see this factor frequently ignored. I believe, if we still followed out the teachings of Leopold and others, who stated that vaginal examinations were a definite contraindication for the performance of the classical section, in spite of the fact

that we have at times obtained good results in such cases when the low cervical operation was done, our mortality rate would be reduced. The prognosis is better when the membranes are intact.

According to Holland, the mortality when the membranes are intact is 2.2 per cent, while with ruptured membranes the death rate rose to 10.8 per cent. According to Routh 3.6 per cent with unruptured membranes and 10.8 per cent with ruptured membranes and prolonged labor.

Previous attempts at instrumental deliveries of course, make the prognosis still less favorable and with all these dangers, we must not forget that the danger to the child increases in like ratio. The mortality is, of course, influenced favorably when done by competent and well trained obstetricians. For example, I found the report of 107 cesarean sections performed in Houston, Texas, from 1923 to 1926 as recorded by Neal Davis. The mortality in these cases was 14.4 per cent. Fifty-one per cent of the 107 cases were operated by a group of recognized surgeons and physicians in general practice, with a mortality of about 33 per cent. Another small group composed of physicians specializing in obstetrics and surgeons, closely associated with them performed fifty-six consecutive cesarean sections with a mortality of 1.8 per cent. We hear a great deal about the abuse of this operation all over the country and that the operation is being done in various hospitals with increasing frequency, even where the staffs in these hospitals consider their attitude conservative. An excellent example of this is shown in the figures of Greenhill, who reported 874 cervical cesarean sections done at the Chicago Lying-In Hospital. From July 1st, 1915 to July 1st, 1929, there were a total of 51,323 deliveries. Only part of these were delivered in the hospital, and a smaller part were confined in the homes of the patient. Of these cases 1059 were delivered by section, 2.06 per cent. One operation for every 48.5 patients. But let us study this table and see the progressive and astounding increase.

1915 to 1916 there were 2430 deliveries 0.6% Cesareans, 162 Del. per Cesarean.

1920 to 1921 there were 3362 (932 cases more) 1.3% Cesareans, 76 Del. per Cesarean.

1925 to 1926 there were 4350 (988 cases more) 2.7% Cesareans, 36 Del. per Cesarean.

1928 to 1929 there were 4630 (280 cases more) 3.0% Cesareans, 33 Del. per Cesarean.

Why this great increase over a period of fourteen (14) years? Have obstetric



complications increased in this same ratio as to justify this growth in the number of operations? While I can understand that since the introduction of the low cesarean section, many women may now have this operation performed, who formerly either lost their life or that of the baby, but I rather believe that is an indication that the profession is adopting a more flexible rule of indications for the performance of the operation.

Let us look farther. Dr. George Mosher of Kansas City in June, 1927, and Dr. C. Jeff Miller of New Orleans in June, 1929, reported the following figures as to the incidence of the operation.

	Sec	Del.
Burnside (Toronto) .....	1 Per	861
New York Lying-In Hospital .....	1 Per	586
John Hopkins Hospital (Baltimore) .....	1 Per	103
Rotunda Hospital (Dublin) .....	1 Per	97
Sloan Hospital (New York) .....	1 Per	36
Boston Lying-In Hospital .....	1 Per	12

When we study these figures closely we are struck with the difference in incidence in two hospitals of the same city. One with one section in 586 deliveries and the other with one section for every thirty-six (36) deliveries. Part of this difference can be accounted for by the fact that Sloan handles perhaps more private patients who demand that their suffering be relieved in the shortest possible time, but I cannot believe that this would account for the entire difference. Is it possible that the obstetric material is so markedly different in two hospitals of the same city to increase the incidence of operation to this degree?

Max Hirsch of Berlin at the twentieth meeting of the Deutsche Gesellschaft fuer Gynekologie in 1927, made a plea for an increase in the incidence of cesarean sections as the best means to diminish the high maternal mortality which exists today. He advocated the substitution of cesarean section for all vaginal operative procedures except perhaps low forceps. If such a practice were really carried out, it is hard to surmise what our maternal and fetal mortality might be. I am afraid we would reach the mortality figures that were obtained before Semmelweis' investigations and studies. But paint the picture as dark as we may, there are still definite indications when the operation of cesarean section is a life saving procedure and a boon to womanhood, and it becomes a menace only in its abuse.

The woman who is to be delivered by cesarean section should be given the bene-

fit of expert advice and opinion. I do not believe that the general surgeon is in any better position to advise cesarean section than is the obstetrician to advise the removal of the thyroid gland, nor do I believe that the general surgeon is equipped to give the patient the benefit of the most advanced technical methods. It should be the duty of a hospital management to give to the patient such benefits and insist upon complete obstetrical consultations. We have instituted such a rule in our hospital. No major obstetric operation can be performed in this hospital without obstetrical consultation acceptable to the hospital. This does away with snap judgment and often unnecessary operations.

The three great and all important indications for cesarean section are the preservation of the mother's life and health and the preservation of the child's life. All other indications fade into insignificance.

The great majority of cesarean sections are done for pelvic contractions or, to state it more accurately, for a disproportion between the size of the pelvis and the child's head, which renders delivering impossible, or so hazardous that abdominal delivery is a safer method for one or both patients. Great errors are committed in the name of pelvic contractions, and many sections are done for these contractions, when if the case were left alone, it would probably deliver spontaneously under proper obstetric treatment. I once asked a general surgeon who was getting ready to do a cesarean section what the indications for the operation were in his case, and his answer was "contracted pelvis." When I asked what the measurements were, he answered, "they are all very small." This brings me to a matter which has recently occurred in a hospital where I am active. A few months ago an inspector from the American college of Surgeons came to look over our hospital and records. He found among other things that our obstetric histories, as filled out by non-staff members, frequently showed the notation "pelvic measurements normal." He told the hospital that this practice should be stopped, so in due time we posted the following notice: "The American College of Surgeons demands the proper recording of pelvic measurements; the mere statement 'normal pelvic measurements' cannot be accepted. Won't you please cooperate with the hospital, so that we may be kept in an "A"

rating?" The result was that many complaints were promptly registered. Practitioners stated that they had practiced obstetrics for many years, and had never made a pelvic measurement. Others, on the other hand, in order to cover their ignorance of the subject, and under the guise of being too busy, requested the junior or senior interne on the service to make the pelvic measurements.

Recently in looking over some of the records, I saw one with a conjugata externa of 9 cm., and yet this woman had a spontaneous delivery of an eight and one-half pound ( $8\frac{1}{2}$ ) living baby. In another instance, I was called in consultation to see a primiparous woman who had been in labor thirty-six (36) hours, and was according to her attendant, not making satisfactory progress. In this case, I found a true conjugate of 7.5 cm., and yet the recorded measurements were normal. When it comes to measurements of the outlet, conditions are still worse. These measurements are rarely recorded by the average doctor and when taken, are absolutely unreliable. I mention these instances only to show the lack of cooperation between the hospital management, which is trying to give the prospective mother careful and honest obstetric care, and the doctor, who still figures that labor is a normal process and is practicing slovenly methods in obstetrics. I have taught obstetrics for twenty-five years, and have never failed to stress the value and teach the methods of doing pelvic measurements, as has every teacher of obstetrics, and yet we find this deplorable condition existing, due either to a lack of interest or want of knowledge of how to carry out this important procedure.

While the pelvic measurements do not give absolute information regarding the outcome of labor, they are of sufficient importance to warrant the practice in every case. Pelvic measurements are only of relative value; of value only when taken in conjunction with a knowledge of the size of the child's head, since it must be remembered that the disproportion between the child's head and the pelvis is more important than the size of either alone, and that pelvic measurements are of little value, except in rare cases, unless taken into consideration with other important factors involved in the delivery.

We have for a long time been in the habit of dividing the indications for

cesarean section into two great classes. The absolute indication and the relative indication.

It is generally agreed that whenever the true conjugate measures 5 cm. or less, cesarean section is absolutely indicated, regardless of the condition of the patient, or of the duration of labor or possible presence of uterine infection, since in such cases of extreme pelvic contraction, the delivery of a normally developed or even small fetus is practically impossible, even after embryotomy. This is practically the same indication that obtained in early days, when the mortality resulting from this operation was so high that the prognosis was almost hopeless. At present, however, this limit has been extended. In view of the satisfactory results following sections under proper conditions, it is now held that cesarean section is absolutely indicated in all pelvises measuring 7.5 cm. or less whenever the child is full term and alive, the mother uninfected and the surroundings suitable for an operation of that character.

If, however, the patient has been seriously exposed to infection and has been in labor a long time, and is showing signs of exhaustion, the prognosis of the conservative operation will probably be sufficiently doubtful to indicate a modification of the classic procedure. Either a supravaginal hysterectomy, a low cervical operation, or possibly a Portes operation should be done. On the other hand in cases of this type, when the child is in poor condition or dead, craniotomy is the operation of choice, since section of patients late in labor is never justifiable, except in the interest of the child. In other words, the interest of the child may at times be the factor to render a serious risk to the mother justifiable, but unless it seems almost certain that the life of the fetus can be guaranteed by running these grave risks to the mother, her interest alone should be considered, or if the family after understanding the risk to the mother insist that the child be given every possible chance.

In that group of pelvises designated as the borderline types, viz., with a conjugata vera between 7.5 cm. and 8.5 cm. in flat and 7.5 cm. to 9 cm. in generally contracted pelvises, the operation likewise may be indicated. In patients with this type of pelvis a spontaneous delivery is sometimes possible, or at least, the delivery of a liv-



ing child is often accomplished, with the aid of forceps or some other simpler obstetric operation. The course of labor in such cases, however, depends not only upon the degree of pelvic contraction, but more particularly upon the size and consistency of the fetal head, and the character of the uterine contractions, but it must not be thought that the mere possibility of a delivery through the pelvis is the only factor to be considered, but the effect of a severe labor on the further life of the mother, with the chance of serious traumatism, must be kept in mind. Given two women with practically identical pelvic measurements, and the children of the same size, may have entirely different deliveries. One may have an easy spontaneous labor, while the other may require a major operation. It is this class of so called borderline pelvis that cause the obstetrician the greatest amount of anxiety and exact from the attendant the exercise of the greatest judgment to determine which case may be safely left to nature, and which should be operated upon. I am often confronted with such problems and not infrequently at a loss to make a decision.

If the patient is a multipara, the history of the previous labor or labors may be helpful. If serious disasters have previously occurred, cesarean section should be chosen without hesitation, unless one is convinced that the present child is considerably smaller than the previous ones, or that one can determine that the previous mishaps were due to poor obstetric judgment or technique.

It is generally a fair rule to say that when a woman with a borderline pelvis has lost one child as a result of difficult labor, cesarean section should be done in succeeding pregnancies, and this is particularly true when more than one child has so been lost. However, in many cases the ultimate result depends on other factors than the size of the fetal head and the size of the maternal pelvis, it depends on factors which cannot be determined until the patient has been in labor for some time. Such things as the frequency and strength of the uterine contractions, the time at which the membranes rupture, the rigidity of the soft parts, and the moldability of the child's head, must all be taken into consideration. So it may be that the woman will lose two children before the obstetrician has made up his mind that cesarean section should be done.

In women with pelves of only moderate contraction of the true conjugate diameter, cesarean section will seldom become necessary, unless in such cases in which the child is over-developed. Contractions of the pelvic outlet do not uncommonly call for cesarean section, but here too more than the mere pelvic measurement must be considered. Williams has shown that contraction of the outlet of the pelvis is the most common form of contraction met in the white woman, and yet, how often do we not see the measurements of the outlet entirely omitted. It is generally claimed that a transverse diameter of the outlet of 7 cm. or less, is a positive indication for section, but I do not believe that one is justified in making the statement so dogmatic, for one is often surprised to see spontaneous labor in marked contractions of the outlet, and again seriously complicated labors in only moderate contractions. More depends on the posterior sagittal diameter than upon the transverse diameter. This diameter is the distance between a line joining the ischial tuberosities and the tip of the sacrum. Its size varies with the degree of arching of the pelvis.

Many other pelvic indications exist for the performance of this operation, such as kyphotic pelves, oblique pelves, spondylolisthetic pelves, etc., but time will not permit a discussion of these. Numerous non pelvic indications have arisen in the course of time, such as tumors of the uterus and other pelvic organs. In the majority of cases of fibromata of the uterus no complications arise. The effect which they produce, however, varies with their size, number and location. Cervical fibroids occasionally interfere with proper dilatation, and occasionally fibroids produce sloughing in the puerperium and for fear of such results, cesarean section may be considered. Large fibroids, particularly of the lower uterine segment, may so obstruct the pelvis as to make spontaneous delivery impossible and render the entrance of the fetal head into the pelvis hopeless, but since these tumors often rise out of the pelvis late in pregnancy or after labor has progressed for some time, it is well to delay decision as to the best method of treatment until the patient goes into labor.

Cancer of the cervix uteri complicating pregnancy may in some instances be a

reason for cesarean section, but rarely so.

Ovarian tumors not infrequently complicate pregnancy, and add greatly to the danger of the delivery. Twisting of the pedicle during pregnancy requires, of course, immediate operation. When the tumor is discovered early in pregnancy, it should be removed, since it has been found that such operations rarely interfere with the further progress of pregnancy. On the other hand, when the tumor is discovered late in pregnancy, the treatment will vary with the conditions found. If the tumor is freely movable with a long pedicle, it should be removed at any time before the last month of pregnancy. It is not an indication for cesarean section, unless, it is so situated that it will block the pelvis canal. Postural treatment is often effectual.

In considering the performance of cesarean section for whatever cause, one must always bear in mind that a repetition of this operation may become necessary, and while the dictum that certain authors have laid down "once a cesarean, always a cesarean" is exaggerated, this is nevertheless often times true.

The occurrence of pregnancy after a classical section is not without danger, since rupture through the former incision happens in from 1 to 4 per cent. The rupture may occur any time after the seventh month, but is particularly likely, if the patient is allowed to go into labor. If it is certain that the former wound was properly sewed and that it healed without infection, one might allow the woman to go into labor, provided, of course, that the cause which prompted the first section is no longer present. In such cases, labor should be watched carefully and the patient delivered with forceps as soon as the head reaches the spine. My personal opinion is that the test of labor is dangerous.

I cannot allow this opportunity to go by without expressing my views regarding the performance of cesarean section in the treatment of eclampsia and in placenta praevia. It is generally claimed that section in the hands of the experienced obstetrician gives better results than conservative treatment in the hands of the inexperienced, in cases of placenta praevia, but this is a poor argument, for placenta praevia is a serious condition and the inexperienced should not be treating such a grave complication of pregnancy.

The bad results attending the treatment of placenta praevia in the hand of the inexperienced has led many surgeons to recommend section as a routine procedure. In looking over the figures which I have before me, I think anyone must admit that the routine section is ill advised.

#### COMPARATIVE MORTALITIES IN PLACENTA PRAEVIA

##### Conservative Measures

Series	Mortality
Bourse .....	5.9%
Blacker .....	1.7%
DeNormandie .....	4.0%
Hitschman .....	1.6%
Jellett .....	3.6%
Whitehouse .....	4.2%

##### Cesarean Sections

Series	Mortality
Essen Moller .....	12.5%
Hitschman .....	3.6%
Holland .....	11.5%
New Orleans .....	7.3%

In those rare cases occurring in primipara with an undilated cervix and a living or viable child, cesarean section may be indicated, but for the most part better results will be obtained by conservative measures. Our methods of treatment are not so much at fault as is the failure on the part of the attendant to recognize the symptoms which point to the existence of a serious condition and delay in the treatment. I feel that the routine adoption of section for this condition will result in an increased, rather than a decreased mortality. The advocates fail to realize that for the most part these cases are seen when infection has either occurred or is likely to occur, and that the fetus is already jeopardized by the maternal bleeding, and is in a great number of instances, so premature that it can never storm the vicissitudes of extra-uterine life.

Regarding the practice of cesarean section in cases of eclampsia, I feel that this is rarely ever a justifiable procedure. The mortality figures range from 24 per cent to 66 per cent, while the mortality figures in cases treated conservatively range from 2.6 per cent to 18.9 per cent. Stoeckel of Germany, however, shows a remarkably low mortality, viz., 8.4 per cent out of one hundred nineteen (119) operations, but since he performs cesarean sections immediately after the first convulsion it seems likely that many operations are performed unnecessarily. Many mild cases would, no doubt, have recovered under conservative treatment.

#### CONCLUSIONS

1. Cesarean section is a greatly abused



operation and is not capable of displacing vaginal operative procedure.

2. Cesarean section is often a dangerous obstetric operation, and not always a life saving operation for the child.

3. The broad indications for section to save the child's life at the expense of the mother's has no place in obstetrics.

4. Since cesarean section can influence the health and well being of the woman, who is responsible for the increase of the race, and can diminish her chances for further healthy propagation, the operation should be done only after very carefully weighing the indications, and with a full knowledge of the responsibility in the matter, and should then be done only by an experienced obstetrician. One's knowledge of obstetrics is shown particularly in the handling of cases of contracted pelvis, where patient waiting is so often crowned with success.

5. The practice of operating unnecessarily in order to lower ones mortality statistics is to be condemned, but a way must be selected which will offer the greatest number of permanent recoveries and cures, in cases of eclampsia and placenta praevia.

330 Metropolitan Bldg.

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#### COMPARISON OF PREGNANCY TESTS

Milo R. White and Alvin O. Serverance, Detroit (Journal A. M. A., Oct. 31, 1931), found that in 191 Aschheim-Zondek reactions there were 20 instances in which the result did not check with the final diagnosis. There were five false positive reactions among sixty-nine controls which were not pregnant. There were twenty-nine observations in a group of ectopic pregnancies and incomplete abortions, fourteen of which were negative. In only one case of pregnancy was the Aschheim-Zondek reaction negative. The Brouha reaction was uniformly positive in a group consisting of sixty normal pregnancies, ten ectopic pregnancies and nine incomplete abortions. However, there were ten false positive reactions in a series of twenty-seven nongravid women. Four of these showed hypertrophy of the endometrium; three complained of menstrual irregularity, and one had tuberculous salpingitis. The Friedman test was observed in forty cases. In the groups of normal pregnancies and nongravid controls there were thirty-two observations, all of which were correct with one exception. In this case, which proved to be a normal pregnancy, the reaction was carried out on the thirty-second day after the last menstrual period. There were four ectopic pregnancies, which gave two positive and two negative reactions. There were four incomplete abortions, three of which gave positive reactions. The tests of Achheim and Zondek and of Brouha gave false positive reactions which probably depended on some endocrine disturb-

ance. In such cases a consideration of the history usually prevents confusion. In the groups of ectopic pregnancies and incomplete abortions, the Aschheim-Zondek reaction was of value as a diagnostic procedure in 51 per cent of the cases, whereas the Friedman reaction was of diagnostic value in 62 per cent of the cases. The Brouha reaction was uniformly correct; however, this reaction does not lend itself as a practical diagnostic aid in cases of this type because of the time required for carrying out the test. In cases of suspected normal pregnancy the Brouha reaction possesses distinct advantages over the Aschheim-Zondek reaction in that the results are determined macroscopically, and nearly mature test animals may be used. The advantages of the Friedman reaction are that only one test animal is required and that the reading may be made macroscopically at the end of from twenty-four to forty-eight hours. In view of the authors' own experience and that of others who have reported a total of 300 observations, they believe that the Friedman test is a dependable biologic reaction and a suitable laboratory procedure. The tests of Aschheim and Zondek, of Brouha and of Friedman depend on a quantitative change in the amount of active principle that is excreted in the urine during pregnancy. This active principle is presumably anterior lobe hormone. A substance specific to pregnancy has not been demonstrated. The serum test of Manoilov and the pupillary reaction of Bercovitz have been of little value as diagnostic aids.

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#### PYREXIA IN MALIGNANT NEPHROMA (HYPERNEPHROMA)

The occurrence of fever in malignant nephroma of the kidney in two cases in a series of seventeen of these tumors at the University Hospital has served to focus the attention of C. D. Creevy, Minneapolis (Journal A. M. A., April 13, 1929), on it, particularly since a knowledge of this relationship might have served to clarify the pre-operative diagnosis in the first case. In this series of seventeen cases of malignant nephromas, fever was a prominent feature in two, or 11.7 per cent. Elevation of the temperature to above 100 F. was present in three other cases, but was associated with an obvious complication in each instance. Only four cases of mixed tumor of the kidney in infancy occurred in the group, and all of these were afebrile. He concludes that pyrexia is not an infrequent accompaniment of malignant nephroma (the so-called hypernephroma). It probably has its origin in the formation by the tumor of an abnormal product of neoplastic metabolism. The presence of fever may assist in, rather than obscure, the diagnosis of malignant nephroma. Malignant nephroma should be considered whenever an obscure fever is present.

# HABITUAL DISLOCATION OF THE STERNOCLAVICULAR ARTICULATION—A CASE REPORT

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E. EUGENE RICE, M.D.  
SHAWNEE

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Habitual dislocation, either spontaneous or traumatic, of the sternoclavicular joints are not common and a brief review of the literature does not give much information as to the etiology, pathology or the best method of treatment.

*Etiology:* The condition may be either spontaneous or traumatic. The most common is of traumatic origin usually following lifting heavy objects with the arms abducted and extended, although it may follow a severe trauma of the shoulder girdle.

The spontaneous dislocation may be present from congenital origin, not as a complete deformity, but usually develops gradually later in childhood or adolescence with the increase in functional activity. Congenital dislocations may often be associated with other congenital defects as in the case report of Kunne in which the condition was preceded by a congenital dislocation of the hip.

*Pathology:* The condition at operation of the joint varies usually with the cause of the dislocation. In the acute traumatic type there is usually a rent in the capsule with pericapsular and capsular thickening, a loss of synovial fluid, and a laceration of the meniscus. In the spontaneous type there is usually found a markedly relaxed capsule without any evidence of a tear and the articular cartilage is usually attached to the clavicle. The joint cavity itself is usually increased in size and there is a larger amount of synovial fluid.

*Symptoms:* In traumatic injuries of this type there is always pain associated at once with the injury and which recurs each time the dislocation recurs. Swelling at the site of dislocation is associated, at first rather large, but as the acute condition subsides the swelling is limited to the size and site of the head of the clavicle.

The spontaneous condition may be noted only when the deformity is noted at the

base of the neck, as in this case report, or may be noted only as a deformity when the arms are lifted above the horizontal, when there is usually a snap and some pain associated and a noticeable increase of the deformity present, because the joint is again dislocated.

Usually when once this joint is dislocated there is a habitual dislocation with any attempt at using the arms, and this recurrent deformity and the associated pain requires operation for a permanent cure.

*Diagnosis:* The diagnosis is usually not difficult as the deformity is very apparent and recurrent with the associated pain and swelling, especially following a history of trauma.

An X-ray confirms the diagnosis, but is not essential because the typical location and deformity confirms the diagnosis, although an X-ray should always be done in the acute traumatic cases to eliminate any possibility of an associated fracture.

Usually when the condition is once present it reoccurs until proper operative treatment is instituted.

*Treatment:* Reduction of the dislocation is usually easy, as abduction of the arms and a lowering and straightening of the shoulders brings the dislocation into correct position and in the acute conditions immobilization should be maintained for three weeks before any motion is instituted and then only too often the condition becomes habitual and requires operative treatment.

Operative arthrodesis offers the only permanent cure for this condition and should be done when the condition causes any discomfort or disability.

The technique consists of adequate exposure by the most inconspicuous scar, opening of the joint cavity, removal of the articular cartilages and a fixation of the head of the clavicle to the sternum. This



fixation may be done with rustless wire or as in this case with kangaroo tendon, then closure of the joint without drainage, and proper immobilization of both shoulders for three to four weeks, then gradual return of function and after eight to ten weeks full return to duty.

#### CASE REPORT

A. B., a tall, thin, white female of 19, whose weight was 97 pounds, height 66 inches, three years ago first noticed a swelling at the base of her neck on the right side while looking in the mirror and this deformity was found to be tender on palpation and increased on raising the arms. This gradually became more marked and every time the arms were raised above the horizontal the deformity became more marked. About four months later the left side was noticed to be in the same condition and the condition was becoming more painful and disabling the girl from her occupation as a clerk.

There was no history of previous illnesses or deformities and the general physical examination was normal. The white blood count was 6800, urine normal and the Wassermann was negative.

A diagnosis of bilateral habitual dislocation of the sternoclavicular articulation was made and an arthrodesis was done.

Under general anaesthesia a low collar incision resembling a thyroid incision was made and the skin flap was reflected. The joints were exposed and opened and the cartilage of the head of the clavicle and its articulation on the sternum were removed completely, a diagonal drill hole made through the head of the clavicle and the sternum, care being taken that the hole did not go through the posterior aspect as there was danger of damage to the mediastinum, and the ends of the clavicle and sternum closely approximated and fixed with kangaroo tendon. The joint capsule closed tightly and the subcutaneous tissue and skin closed without drainage.

A clavicular T-splint was applied with a pad under each shoulder to hold them forward and keep the clavicle and sternum in apposition. This was worn for four weeks during which time the patient was ambulatory and very comfortable, after which time she was given gentle exercise and gradual return of the use of the

shoulders and was able to return to work at the end of two months.

Examination after six months revealed slightly enlarged sternoclavicular joints with some return of function which were not painful or tender and there had been no recurrence of the dislocations.

1. Ortenberg, H. von: Die habituelle Luxation der Klavikula und ihre Behandlung (Habitual dislocation of the clavicle and its treatment). *Medizinische Klinik* 18:1642; 643, December 24, 1922.

2. Kunne, Bruna: Ueber habituelle symmetrische Verrenkung des Sternoclaviculargelenks. (On habitual clavicular articulation). *Zeitschrift für Orthopädische Chirurgie* 40:247-257, 1920-21.

3. Grunert: Zur Operation der Luxatio claviculae praesternalis. (On the operation of presternal dislocation of the clavicle). *Medizinische Klinik* 6:864-865, May 29, 1910.

4. Jean, G.: Habitual suprasternal dislocation of the clavicle treated by osteosynthesis. *Bull. et mem. Soc.* November 7, 1923.

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#### REPLACEMENT OF THUMB NAIL

J. Eastman Sheehan, New York (*Journal A. M. A.*, April 13, 1929), reports the case of a boy, aged 16 years, who suffered the loss of the nail from the left thumb. At the time he was examined, there was no longer any nail growth; at about the level of the lunula there was a disintegrating mass, while toward the point of the thumb the nail bed had given place to cicatrized tissues, warped and folded in leaves. There was considerable pain. It was evident, especially in view of the failure of previous interventions, that the problem was one of replacement—of introducing a nail that would grow. From this consideration two questions arose: Could nail substance transferred to an area in which growth had ceased be expected to grow? If so, from what area should it be taken, and what would be the subsequent history in the area to be denuded? On reflection as to the nature of the nail substance and as to the process of its production, it was recognized as being as truly epithelial as the epidermis itself, and no one who has had experience with reconstructive surgery can fail to have been made aware of the complete dependability of the epidermal graft. The nail of the thumb of the other hand, to which the new one would be expected to conform, must be the donor, rather than the nail of the great toe, the only other practicable resource. The replacement of one thumb nail by a graft from the other thumb seemed therefore to be beyond prospect of disadventure, and the procedure was carried out in that belief, which was completely justified by the result. There was nevertheless a moment of dramatic interest when, on removal of the bandages, inspection disclosed that healthy growth was proceeding on both nails. Thus there was once more triumphantly vindicated the dependability of grafts whose dependence is on the nourishment of living epithelial cells by the lymph fluid present in the tissues of the base, the exceptional feature in this case being the relatively exaggerated thickness of the nail substance as compared with the horny layer of the skin epidermis.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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DR. P. P. NESBITT.....Associate Editor  
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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Memorial Station, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### HOME SWEET HOME

In August, 1924, without solicitation upon the part of the writer, he was appointed upon the surgical service at the U. S. Veterans' Hospital at Muskogee. The work very nicely fitted in with that necessary in the editorship and secretaryship of the State Medical Association, neither conflicting with the other. For more than seven years the writer was actively engaged in surgical work; during the last three fiscal years performing, personally, more than 500 surgical operations of various types, during each year. So far as is

known most of this work was satisfactory, the beneficiaries leaving as satisfied friends and today they are scattered over the states of Kansas, Missouri, Arkansas and Oklahoma, to the Rio Grande and occasionally stray cases from the southeastern states. Notwithstanding this work, and the fact that practically every surgical case in a 400 bed hospital came under the observation, more or less, of the writer, and that he maintained a surgical ward practically full at all times, some higher authority in the Veterans' Bureau deemed it best that he be transferred to Kansas City, Missouri, a hospital they termed as one of their "choicest locations." Notwithstanding every effort upon the part of the writer and his friends the transfer was insisted upon. As an experiment it was attempted, but it cannot be recalled in years of a long life that the four months, partially spent in Kansas City, were more unsatisfactory, accompanied by more homesickness, and of practically uselessness to the beneficiaries of the Veterans' Bureau, than those proved to be. The experiment was simply too much for the writer, so, after consideration, it was decided that regardless of the economic situation, regardless of what the future might present, a return to Oklahoma, to *home*, his hundreds of friends, was the best thing to do. With this in mind a resignation was tendered, effective not later than January 15th. The writer, aside from making several return trips to the state, permanently returned late in December.

This will be appreciated when it is understood that the writer, your editor, has spend forty-nine years of his life in what was formerly known as Indian Territory, and now called Oklahoma. The members of the Oklahoma State Medical Association may thoroughly appreciate that the writer feels very much the impelling motive that prompted the song "Home Sweet Home."

#### MEDICAL RESERVE OFFICERS' SITUATION

The Medical Society of Virginia passed the following resolution, reading in part as follows:

"Resolved, That the Medical Society of Virginia, desiring that the medical profession may be of the greatest service to our country, respectfully suggest that the best interests of the military service might



be enhanced if the regulations regarding the Organized Reserve were changed to provide for the recommission and reassignment of officers holding assignments such as those mentioned in the second paragraph, even though they may not have completed the required amount of military work, and hereby recommend consideration of such change."

This seems to the writer to be a very correct position. In the first place the function of the surgeon in the army is to treat the sick. Of course, we all know that any physician and surgeon takes a keen delight in regularly attending their sessions, as Medical Reserve Officers. However, there are a large number of eminently qualified surgeons who simply cannot find the necessary two weeks' time demanded by Reserve Corps duty, the result is that eventually they are automatically dropped from Reserve Corps membership. It should not be forgotten that in case of war the medical service, even if to say so sounds unpleasant, is divided strictly into two types of men; those attending strictly to the ill are highly qualified physicians and surgeons, but who know little or nothing of the voluminous paper work demanded from an officer on active duty. On the other hand there is a certain type of physician who dearly loves to "paw" over papers and carry out the necessary routine. These men are largely "paper" surgeons. In time of war, the best medical and surgical service possible should be instantly available, but it seems that it would be much better to every competent internist or surgeon assigned as aide to him, someone who knows thoroughly the paper work demanded.

It would seem that the Surgeon General should be permitted the power of discretion to recommission men of high type, whether they are able to attend Reserve meetings or not.

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#### \* HANDLING THE CRIMINAL AND THE CHARITY CASE

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After many years of observation the writer concludes that there is something radically wrong with the present system of counties, towns, cities and County Commissioners in most sections of Oklahoma, where the charity cases are a problem. It is an irritating fact that the most worthless murderer or criminal is not permitted to go to trial without representa-

tion by an attorney and if he has no funds the Court promptly appoints an attorney who does his best for the criminal, and then the Court digs into the taxpayers' funds and pays the attorney a nominal fee for his work. Not so with the charity case. Except in a few organized localities city officials and County Commissioners pay little or no attention, often no attention or any sort of remuneration for the care of charity cases. Often these cases are good, but unfortunate people. Take for instance, a compound fracture of the femur, probably the most difficult problem confronting the surgeon. The moment the accident occurs the case is hurried to the hospital, no one raises the question as to who will pay the bill, a surgeon is called in to give him the best of his attention. The hospital provides him with nursing, food and drugs and in the end all of them are left with the bag to hold.

It is wrong; it is remarkable that the state should go to such ends to protect, sometimes the palpable wrong-doers and at the same time foster upon the hospital and physicians the long drawn out care necessary to these cases. Certainly something should be done in every county and city of the state to remedy the injustice.

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#### DOCTOR STARR JUDD ON SPINAL ANESTHESIA

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Through some misunderstanding, the press dispatches from Oklahoma City, at the time of the Oklahoma City Clinical Conference, carried the impression that Dr. Judd was opposed to the use of spinal anesthesia. A personal communication from Dr. Judd notes that he does use spinal anesthesia in the lower abdomen and under certain circumstances he also uses it for upper abdominal surgical work. This should set the matter at rights so far as Dr. Judd is concerned, for in the last analysis a surgeon makes up his mind in advance as to which type of anesthetic is preferable in any given case.

It may be of interest to the membership of the Oklahoma State Medical Association to know that the writer, in collaboration with a colleague, has a record of approximately 2000 or more operations performed under spinal anesthesia. In no case was there a fatality due to the anesthesia and in practically no case was there any alarm brought about by its use. Many of these cases were surgery of the upper

abdomen, especially of the gall-bladder and duodenum.

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### LOW COST HOSPITAL SERVICE

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A recent editorial in the Kansas City Star is devoted to an explanation of an important experiment which has just completed its first year in the City of Boston, and having to do with the poor or those unable to pay more than a nominal sum for nursing, hospitalization and medical treatment. The Baker Memorial Hospital, one of 330 beds, and which has available the services of some 200 members of the staff of the Massachusetts General Hospital, was the institution set aside to undertake the experiment. A standard scale of charges was agreed upon, the charges varying for operations, from \$25.00 to \$150.00 (even this little sum, during the present depression is sometimes practically impossible of attainment, by people who otherwise have been financially in good condition). However, regardless of the prolongation and severity of the case no more than that was charged. Only one bill was presented, and that by the hospital, which included medical and surgical fees, the physician receiving his part through the hospital. There were 2,476 patients admitted. A detailed study was made of 503 cases. The family income ranged from between \$1,000 and \$3,000 a year. The average total fee was \$160.00, with \$89.00 for hospital care, \$59.00 for professional services, and \$12.00 for special nursing. Half of these patients paid hospital fees of less than \$70.00 and doctor's fees of less than \$50.00 and only fifty-nine had special nursing.

It seems this system should deserve some special study by the medical profession. Regardless of the family's ability to pay, they must have medical and surgical attention and the burden of hospitalization should be made as lightly as possible.

As pointed out before, the town, city and state should assume more obligations than they have heretofore in caring for these cases. Certainly the hospitals, nurses and physicians should not be imposed upon as they are imposed upon at present. We have pointed out before, however, the tendency of hospital and patient, in the excitement of sudden and serious illness or accident, to demand of the hospital the very best service, including the finest

room, special nursing, etc., only to be found unable to pay fees incident to that type of service. The medical profession should probably make it a part of its duty to gauge the ability of the patient to pay and should emphatically advise them not to engender bills and expenses which only the rich and well-to-do can afford. There is no question but what special nursing is greatly overdone in many hospitals and there is no question but what many patients should go into two or more bed wards rather than into private rooms, with bed, special nurse and similar expensive luxuries. Much of this situation might be relieved by the physician assuming the role of emphatic advisor to his patient.

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### THE FORTIETH ANNUAL SESSION

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Tulsa, May 24, 25, 26, 1932.

Hotel Headquarters, Hotel Mayo.

*Surgical Section:* Chairman, Dr. Fred S. Watson, 401 Commerce Bldg., Okmulgee, Oklahoma.

Secretary, Dr. W. G. Husband, Hollis, Oklahoma.

*Eye, Ear, Nose and Throat:* Chairman, Dr. A. L. Guthrie, Medical Arts Bldg., Oklahoma City, Okla.

Secretary, Dr. J. F. Gorrell, Medical Arts Bldg., Tulsa, Okla.

*General Medicine:* Chairman, Dr. Henry H. Turner, 1200 North Walker, Oklahoma City, Okla.

Secretary, Dr. Fred H. Dorwart, Barnes Bldg., Muskogee, Okla.

*Dermatology and Radiology:* Chairman, Dr. Charles J. Wood, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Carl L. Brundage, Medical Arts Bldg., Oklahoma City, Okla.

*Pediatrics:* Chairman, Dr. C. E. Bradley, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Geo. H. Garrison, 1200 North Walker, Oklahoma City, Okla.

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### TULSA COUNTY COMMITTEES

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Doctor W. J. Trainor, Tulsa, Chairman of the Committee on Arrangement, on behalf of the Tulsa County Society, announces the following Committees to hand-



le the work of the annual meeting, at Tulsa, May 24, 25, 26, 1932:

*General Chairman.* W. J. Trainor, 1011 Medical Arts Bldg., Tulsa, Okla.

*Registrations.* C. C. Hoke, Petroleum Building, Tulsa.

*Finance.* W. Albert Cook, 1107 Medical Arts Bldg., Tulsa.

*Entertainment.* W. A. Showman, 409 Medical Arts Bldg., Tulsa.

*Hotels.* James Stevenson, 615 Medical Arts Bldg., Tulsa.

*Golf.* Charles J. Wood, 511 Medical Arts Bldg., Tulsa.

*Ladies' Entertainment.* Womens' Auxiliary of the Tulsa County Medical Society, Tulsa.

*Reserve Officers.* Paul R. Brown, 517 Medical Arts Bldg., Tulsa.

*Scientific Exhibit.* Morris B. Lhevine, 1007 Medical Arts Bldg., Tulsa.

*Fraternal Dinner.* Ralph A. McGill, 1010 Medical Arts Bldg., Tulsa.

*Badges.* J. C. Brodgen, Mayo Bldg., Tulsa.

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## CLINICS

### FIRST DAY

The following announcement is made as to Dry Clinics:

Dr. E. Rankin Denny, General Medicine, 9:00 A. M.

Dr. N. R. Smith, Neurology, 9:15 A. M.

Dr. C. H. Haralson, Eyes, 9:30 A. M.

Dr. M. O. Nelson, Bacteriology, 9:45 A. M.

### SECOND DAY

Dr. A. Ray Wiley, Surgery, 9:00 A. M.

Dr. Henry Brown, Urology, 9:15 A. M.

Dr. D. O. Smith, Medicine, 9:30 A. M.

Dr. H. D. Murdock, Surgery, 9:45 A. M.

The particular subject to be decided on later.

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## Editorial Notes—Personal and General

KEYES, OKLAHOMA, through the Secretary of its Commercial Club, Mr. H. H. Koontz, wishes very much to have some doctor locate in that town. Anyone interested should write the Secretary.

OTTAWA COUNTY MEDICAL SOCIETY elected Doctor F. V. Meriwether, Miami, president; and Doctor J. W. Craig, Miami, secretary-

treasurer to fill out the term of Dr. W. G. Chesnut, who is in New York for a year.

CHOCTAW COUNTY MEDICAL SOCIETY elected the following officers for 1932, at their December 1931 meeting: Doctors G. E. Harris, Hugo, president; W. N. John, Hugo, secretary-treasurer; C. H. Hale, Boswell, delegate.

DOCTOR ROY FISHER, Frederick, who is a licensed pilot has been appointed State Flight Surgeon for Oklahoma by the Highway Commission. Dr. Fisher is also one of the Medical Examiners for the Aeronautical Branch of the Department of Commerce.

ADAIR COUNTY MEDICAL SOCIETY met in regular session at Westville, December 2nd, 1931, and elected the following officers for 1932: Doctors R. M. Church, Stilwell, president; R. L. Sellers, Westville, vice-president; D. P. Chambers, Stilwell, secretary-treasurer.

CANADIAN COUNTY MEDICAL SOCIETY met Wednesday, December 30th at El Reno for the election of officers for 1932. The following were elected: Doctors D. F. Stough, Geary, President; A. L. Johnson, El Reno, vice-president; Freeman Stough, Geary, secretary-treasurer.

WAGONER COUNTY MEDICAL SOCIETY elected the following officers for 1932, at their December meeting: Doctors J. R. Waltrip, Coweta, president; J. R. Plunkett, Wagoner, vice-president; John D. Leonard, Wagoner, secretary-treasurer; J. H. Plunkett, Wagoner, delegate.

MARSHALL COUNTY MEDICAL SOCIETY met December 15th for installation of officers for 1932. The following were elected: Doctors P. F. Robinson, Madill, president; J. H. Logan, Lebanon, vice-president; J. H. Veazy, Madill, secretary-treasurer; J. L. Holland, Madill, delegate.

DOCTOR C. A. THOMPSON, after a few dismal weeks in Kansas City resigned from the Veterans' Bureau, and has returned to Oklahoma, for the purpose of making it his future home. Dr. Thompson's new address as well as that of the secretaryship will be 810 Manhattan Building, Muskogee.

DOCTOR LEWIS J. MOORMAN, Oklahoma City, was elected President of the Southern Medical Association, at the New Orleans meeting. This election is a distinct recognition of one of Oklahoma's outstanding physicians. The Journal and his many friends congratulate Doctor Moorman upon his election.

STEPHENS COUNTY MEDICAL SOCIETY met December 29, 1931, and elected the following officers for 1932: Doctors J. L. Patterson, Duncan, president; J. B. Carmichael, Duncan, vice-president; D. Long, Duncan, secretary-treasurer; D. Long, delegate; A. M. McMahan, Duncan, Committee on Public Policy.

GARFIELD COUNTY MEDICAL SOCIETY elected the following officers at their annual meeting, held at Enid, December 17th: Doctors

D. D. Roberts, president; C. W. Tedrowe, vice-president; John R. Walker, secretary-treasurer; W. G. Kiebler, member of board of censors; S. H. McEvoy, delegate; all of Enid.

OSAGE COUNTY MEDICAL SOCIETY elected the following officers for 1932 at their annual meeting, held in January: Doctors Roscoe Walker, Pawhuska, president; C. H. Guild, Shidler, vice-president; M. E. Rust, Pawhuska, secretary-treasurer; Roscoe Walker, C. H. Guild, T. J. Colley, board of censors; Divonis Worten, Pawhuska, delegate; B. F. Sullivan, Barnsdall, alternate; C. K. Logan, delegate, Roscoe Walker, alternate.

WOODS-ALFALFA COUNTY MEDICAL SOCIETIES held a joint meeting at Cherokee in December, electing the following officers: Woods County—Doctors A. E. Hale, Alva, president; D. B. Ensor, Hopeton, vice-president; O. E. Templin, Alva, secretary-treasurer; W. E. Simon, Alva; R. L. Hall, Waynoka; Elizabeth Grantham, Alva, censors. Alfalfa County—Doctors A. J. Butts, Byron, president; L. T. Lancaster, Cherokee, secretary-treasurer.

THE AMERICAN SOCIETY for the Study of Goiter is again offering an award of Three Hundred Dollars (\$300.00) for the best essay based upon original research work on any phase of goiter, presented at their annual meeting in Hamilton, Ontario, Canada, June 14, 15, 16, 1932. Competing manuscripts must be in English and in the hands of the Secretary, J. R. Yung, M.D., Rose Dispensary Bldg., Terre Haute, Ind., not later than March 15th, 1932. The first award of the 1931, Kansas City, Mo., meeting was given Dr. Bruce Webster, Presbyterian Hospital, New York City.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met at Purcell, Oklahoma, December 8, 1932. The following program was given:

1. Address of Welcome—Thos. P. Pace, District Judge, Purcell.
2. Response—C. W. Sprouce, M.D., Sulphur.
3. Some Physiological and Pathological Conditions of the Thyroid—G. E. Johnson, M.D., Ardmore.
4. Spinal Anesthesia—W. H. Livermore, M.D., Chickasha.
5. Examination of the Urologic Patient—A. R. Sugg, M.D., Ada.
6. Winter Bronchial Infections—W. S. Ivy, M.D., Duncan.
7. The Tonsils from the Standpoint of the General Practitioner and Specialist, also Demonstrating LaForce Instruments under Local and General Anesthesia—G. S. Barger, M.D., Purcell.
8. Banquet at Christain Church, 7:00 P. M.
9. The Relation of the Physician to the Patient—R. Q. Goodwin, M.D., Oklahoma City.
10. The Relation of the Public to the Doctor—G. N. Bilby, M.D., State Health Commissioner, Oklahoma City.

Visiting ladies were shown various social attentions—Tea-Bridge party, and a general good time.

MANGUM will hold a meeting fostered by the Extension Department of the State University on January 20th, beginning at one o'clock and continuing that afternoon and evening. The visiting faculty has been very carefully selected and consists of the following: Dr. E. D. Plass, head, Department of Obstetrics and Gynecology, University of Iowa, formerly of the Department of Obstetrics of John Hopkins University.

1. Contraceptive advice; Sterilization; Management of Normal Pregnancy.
2. (a) Abnormal Presentations and Positions. Occiput Posterior; Face; Brow; Transverse; Breech; Compound.
- (b) Prolapsed Cord. Recent Birth Injuries and Their Repair; Repair of Old Birth Injuries at Delivery.

Dr. J. R. Manley, Duluth, Minnesota:

1. Vaginal Discharge During Pregnancy (with slides).
2. Puerperal Sepsis.

Dr. W. T. McConnell, Associate Professor of Obstetrics, University of Louisville, School of Medicine:

1. The Importance of Prenatal Care.
2. The Toxinemia of Pregnancy.

Mangum physicians propose to make this one of the largest meetings ever held for Western Oklahoma physicians. It goes without saying that everyone who can should be present.

AMERICAN COLLEGE OF SURGEONS announces its 16th Annual Clinical Session, to be held in San Francisco the week of April 4th, 1932. The program, which is about complete may be secured at a later date from Mr. E. R. Loveland, Secretary, 133 South 36th, Philadelphia. More than sixty papers and addresses will be presented at the meeting, these indicating the recent trend of medicine. There will be papers and addresses especially devoted to physics and physiology of arteriosclerosis and hypertension. Among other things of interest that will be discussed: Congenital narrowing of the aorta and pulmonary arteriosclerosis; The effect of funnel breast on the heart and circulation atelectasis and tuberculosis; the treatment of cavities; some observations on pulmonary emphysema; and the role of bacteria in asthma. Topics on the liver will range from the element of error in the diagnosis of jaundiced patients and a very interesting study of primary carcinoma of the liver in Chinese to the effect of the administration of glucose and insulin on the glycogen content of normal and pathological livers, and the pathology of the liver in exophthalmic goiter and the Grave's constitution.

The most modern concepts in the diagnosis of Bright's disease, nephritis and nephrosis are presented. Practical applications of recent discoveries in the field of gastrointestinal physiology; the clinical aspects of gastric secretions; the newest experimental and clinical work on the adrenal gland will be presented. Also the biological and clinical importance of ovary-stimulating substances. Studies of calcium metabolism and diseases of the parathyroid gland. The



newest knowledge on the nature of epilepsy and its treatment appear.

The mechanism of edema formation in disease; on leukopenia; on the action of benzol, roentgen rays and radium on the blood and blood-forming organs; relation of paranasal sinus infection to disease elsewhere; on the clinical significance of the atrophic tongue and on the experimental basis for vaccine treatment of chronic arthritis with a summary of the results of treatment.

The outstanding symposium of the session will bring to clinicians the results of the almost unbelievable advance to our knowledge of the involuntary nervous system. The anatomists, physiologists and clinicians will collaborate in this extremely important presentation.

The guest fee of \$15.00 includes one year's subscription to the *Annals of Internal Medicine*, the official journal of the College, in which the papers and addresses read during the session will be published.

### THE GENESIS OF SOCIAL INSURANCE

(This is the first of several articles upon Social insurance problems from the pen of Dr. Edward H. Ochsner. Dr. Ochsner is preparing to write six articles covering this subject. Probably no man in the country is better qualified to write upon this subject).

Social insurance is the hybrid offspring of impracticable sentimentalism and political expediency. It is an epidemic disease first observed in Germany about fifty years ago which has gradually spread and infected a considerable number of the nations of the earth and now has arrived at our very doors. Unless we succeed in establishing a rigorous quarantine of enlightened public opinion, it will surely gain a foothold in this country in the not distant future.

Social insurance consists of the following subdivisions or parts; Compulsory health insurance, old age pensions, widows' and orphans' pensions, and unemployment pensions or doles. In none of the countries were they all adopted at the same time. Germany adopted compulsory health insurance in 1883, and all of the other forms since that time. Austria adopted compulsory health insurance in 1888; Hungary, in 1891. England adopted old age pensions first and compulsory health insurance in 1911, and the others subsequently. In this country some of the states have adopted old age pensions and some widows' and orphans' pensions, but so far none have adopted compulsory health insurance, for which negative blessing let us raise our voice in thanksgiving.

When the scientific physician is confronted with the problems presented by a new patient, he meets the situation in the following manner: he obtains a complete family and personal history in order to ascertain if possible the causes which have brought about the condition; by his physical examination and laboratory investigations he finds out what variations from the normal have taken place; after all this he is in a position to advise and institute the proper treatment. Let us follow the same course in the study of this problem.

During the late seventies a number of German parlor socialists conceived the idea that the state

make itself responsible for the medical care of its workers. The sentiment in favor of compulsory health insurance grew rapidly among the workers, and Bismarck, although expressing serious doubts as to the soundness of such a measure, yet feeling that something had to be done in order to appease the clamor of the proletariat and the alarming growth of socialism, adopted social insurance as a government measure, had a bill drafted and enacted into law.

In England, National insurance, as it is called there, had a slightly different setting but substantially the same background. In 1910, David Lloyd George in order to strengthen himself politically decided the time for such legislation was opportune. Not being able to speak German, he gathered about himself several interpreters, hid himself to Germany and after interviewing the well paid heads of the German system, and after having been wine and dined and lionized for two weeks or so, he returned to England very enthusiastic about the whole project, had a law drafted, and later secured its passage. In the recent parliamentary election the Liberty party, of which Lloyd George has been the head for many years, elected just four members to Parliament or less than one percent of the whole number. So while Lloyd George may have saved his political skin by National insurance in 1911, he certainly lost his hide by it in 1931.

Practically every reform movement attracts to itself a considerable number of well meaning, emotionally impressionable, impractical, irresponsible, very vociferous individuals, and very often a group, usually the very ones who manage the propaganda and who hope to gain some pecuniary benefit from it. Social insurance is no exception to this general rule.

Some of the common characteristics of reformers is that they want a new law passed for every human ill, and when the law is enacted, they either sit back waiting for the millenium to arrive or they rush off looking for new evils to correct by new laws forgetting to see to it that the law just passed is being properly enforced, and forgetting at all times that all laws must depend for their enforcement not upon supermen but upon men often of less than average intelligence and integrity, upon politicians and their henchmen, who are quick to see how these usually unsound and loosely drawn laws can be converted to their own advantage.

### THE OKLAHOMA CITY CLINICS

The doctors of Oklahoma City have just finished what was pronounced by many to be the greatest meeting they have yet held. In spite of hard times, in spite of lack of funds, and in the face of more or less general pessimism, the officers and committees covered their ground well and arranged a program sufficiently broad and interesting to draw doctors from all surrounding states to our city. The Society having put its hand to the plow must not look back but must make a straight furrow and continue to cultivate its garden. The Southwest expects it.

The meeting was unique in many respects. More than 150 post-graduate lectures were delivered, some forty of which were by distinguished men from all over the United States. The scope of subjects was broad enough to touch

every field of medicine and the papers were uniformly well prepared. The schedule was so arranged that the visiting doctor could select any line of study which might appeal to him and follow it through for the entire four days. In addition to the scientific features the visitors were entertained so well that they had not a moment to spare from the time they arrived until the last number was given. They were banqueted, given stag suppers, invited to symposiums, entertained at roundtable discussions, and even offered a little vaudeville entertainment for variety. If such programs are continued from year to year there can be no doubt that Oklahoma City will make itself a leader along this line.

Clinical society programs of this type are a distinct innovation of the last ten years. They have many points of advantage over other meetings. They tend to break down sectional barriers and cause the outstanding men of the profession to be well known in every part of the United States. They likewise cause many doctors to take advantage of the inspiration and up to date methods of such leaders who never would take the time and trouble to go back east for post-graduate study. They offer a variety of program at minimum cost which was never before offered; and they are usually much better organized than haphazard programs which are heard at state and county society meeting, or lectures which the visiting doctor may happen to hear when he spends a week in a great Eastern center.

Building on this idea the Oklahoma City group is attempting to bring the finest possible talent to their meetings, increasing the size and scope of the program every year and adding entertainment features which prevent the men from becoming tired out. Among those who appeared on the program this year were Drs. Judd and Cabot of Mayo Clinic; Herrick and Beck of Chicago; Kern of Philadelphia; Dandy of Baltimore; Crossen and Vogt of St. Louis as well as many others who are equally eminent in special lines. The talks given by these men were classics of science and the doctors who heard them were well pleased and felt that their time was not wasted. Expressions of satisfaction were heard on all sides, both from members and non-members. The commercial exhibitors were unanimous in saying that it was an excellent meeting. They are all enthusiastic boosters and will help advertise it in the future. The total registration was in excess of 450, which was greater than the registration of a year ago; and every man who attended states that it is his firm intention to return next year.

#### WOMAN'S AUXILIARY TO THE OKLAHOMA STATE MEDICAL ASSOCIATION

Editor Mrs. John Z. Mraz  
Oklahoma City

#### American Medical Association Radio Talks.

After reading the account of the National Auxiliary activities at the annual meeting in Philadelphia, June 8-12, 1931, and after reading the reports of the various committees, the writer decided this would be a good time to introduce the American Medical Association Radio Talks.

Some auxiliaries through their public health chairman and advisory committee to the county medical society have already arranged for a weekly broadcast of health talks selected from

the list furnished by the American Association. These talks already prepared are furnished free by the national association to save the busy doctor's time in writing them.

They cover a very wide range of subjects, from feeding the baby and upset stomachs to poisonous hair dyes and postponing one's own funeral. In fact they cover nearly every imaginable subject from the advent of a human into this world to his exit, assuming that human lived to a ripe age. Surely such a subject as, "The Carbon Monoxide Monster" would attract the attention of intelligent women. Now that the season has arrived when people are shut up in houses with doors and windows closed, and breathing, for the most part, air which is very dry without the addition of gases formed by the various fuels used for heating purposes, and the gases which escape even in small measure from mechanical iceboxes, would it not be a splendid idea to fortify against such insidious enemies?

The talks chosen to be given should be approved not only by the advisory committee to the county society but also by the county medical society, and should be delivered by a member, in good standing, of the county medical society. Any one or more of the listed talks may be secured free of charge from the Bureau of Health and Public Instruction, of the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

The county auxiliary's part is to:

(a) First take the list of radio talks to its advisory committee and secure the committee's approval and the co-operation of the county medical society in carrying on a radio program.

(b) Make the necessary arrangements with the broadcasting station.

(c) Secure from the A. M. A., the radio talks chosen by the county medical society to be given.

(d) If agreeable to the advisory committee, an auxiliary member may briefly announce the speaker, being sure to say that he is a member of .....county medical society and the American Medical Association.

Some such brief announcement as the following should be made:

This is the radio hour of the.....Woman's Auxiliary to the.....county medical society. The speaker is Dr. .... a member of ..... county medical society and the American Medical Association. His subject is .....

The writer listened in to a wonderful radio talk broadcast over the Columbia network Thursday, November 5, 1931, by Dr. Graham of New York county medical society. The Dr. was being interviewed by a Miss Ann Morgan. He dispensed some splendid advice to mothers having daughters in high-school, information concerning that important age, adolescence.

In 1930, the national chairman of publicity sent questionnaires to auxiliaries of all the states. Some states failed to respond and, although the report was incomplete, some interesting data was gathered. It developed that there was a decided preference for the educational work over the social and philanthropic and, especially health education over any other educational activity.

In that event then wouldn't it be a great oppor-



tunity for county auxiliaries to indulge themselves in Public Health education by instituting these radio talks so generously supplied by the American Medical Association.

It occurs to the writer, since preventative medicine is the doctor's slogan today, that this is a most seasonal moment for the woman's auxiliaries to be real auxiliaries to the medical societies by promoting these radio talks. This would also seem an ideal occasion to say a few good words for "Hygiea," that fine magazine published by the American Medical Association for the lay public.

Respectfully submitted by Mrs. John Z. Mraz, Editor.

#### DOCTOR ARTHUR L. GREGORY

Doctor A. L. Gregory, pioneer physician of Muskogee, died October 22nd at the age of 55 years, after an illness of several weeks. Dr. Gregory was born in Philadelphia in 1877, where he received his degree from the Jefferson Medical College in Philadelphia, in 1901, after first graduating from the University of Pennsylvania. He came west to St. Louis shortly after receiving his degree, where he attended Washington College, doing post graduate work in surgery for one year. In 1902 Dr. Gregory moved to Muskogee, where he immediately became associated with the M. O. & G. Hospital, acting as assistant surgeon to Dr. Wm. T. Tilly, chief of the staff. Dr. Gregory also took an active part in the founding of the old P. and S. Hospital and served as chief surgeon of its staff. He was also a member of the staffs of both the Baptist and General hospitals since their founding.

Dr. Gregory is survived by his widow, a son and two daughters.

He was a member of both the Elk and Masonic fraternal orders.

Burial was in Greenhill cemetery.

#### BRONCHOSCOPY AS AID IN DIAGNOSIS OF OBSCURE PULMONARY DISORDERS

According to Edward A. Looper, Baltimore (Journal A. M. A., Oct. 31, 1931), the practical use of bronchoscopy as an aid to the diagnosis and treatment of diseases of the chest is increasing in favor. In many cases a final diagnosis can be made only through the help of endoscopy after all other means of investigation have failed. A well equipped central clinic unquestionably affords the best opportunity for the study of such cases, but for various reasons many deserving patients never reach such a clinic. It is apparent, therefore, that there is a fertile field for investigation for the bronchoscopist in hospitals for the treatment of pulmonary diseases. The author earnestly hopes that the time will soon come when the management of all hospitals for the treatment of tuberculosis will insist on the establishment of a bronchoscopic clinic as an important department in such institutions.

#### TREATMENT OF CANCER OF LIP BY ELECTROCOAGULATION AND IRRADIATION

George E. Pfahler and Jacob H. Vastine, Philadelphia (Journal A. M. A., Jan. 2, 1932), emphasize the fact that in cancer of the lip the technic and plan of treatment should always be adapted to the individual case, because cancer does not develop according to rule and cannot be treated by any fixed rule. The aim should be to treat all cases in the very early stages in which the local lesion is small and devoid of palpable lymph nodes. One should always use bimanual palpation with one finger in the mouth and one outside in order to detect early lymph nodes. In such early cases it is the authors' custom to use a fine needle with the high frequency current and surround the lesion with a line of local destruction, then remove a specimen for microscopic record, and then destroy the local disease completely. If the disease extends deep enough to reach an artery in an elderly patient with arteriosclerosis, it is their custom now to use a suture ligature instead of simply sealing the area with the high frequency current, so as to avoid a secondary hemorrhage. When lesions are relatively small, this destruction and subsequent roentgen treatment leaves a soft scar and practically no deformity. They then give an 80 per cent dose of high voltage x-rays with 200 kilovolts and 0.5 cm. filter over the lip and chin, and on the following day a similar dose in the submental and the submaxillary regions; within a week they bring this up to a full erythema dose according to the "saturation" (Pfahler) technic. In the more advanced cases, with local disease of large extent, but still with no palpable lymph nodes, they carry out the same general plan; but if there is likely to be much deformity they try to eliminate the local disease by surface interstitial irradiation with radium, using dental compound or more commonly using the lead clamp method first described by Grier. In the more advanced cases, with local disease without palpable lymph nodes, they increase also the roentgen treatment in the aforementioned fields and add treatment from behind forehead under the angle of the jaw, giving a total of from 200 to 300 per cent of an erythema dose over each field, but never exceeding the "saturation" value. When dealing with primary cases associated with palpable lymph nodes, they usually add radium packs over the lymphatics and at times insert radium needles into the lymph nodes and around the lymphatics likely to be involved. In no instances do they depend on interstitial irradiation alone for either the local or the lymphatic treatment. When radium is not available and electrocoagulation is inadvisable, good results may be obtained by intensive and skillful local roentgen treatment. The combinations described have been more satisfactory than roentgen treatment alone.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Gangrene of the Finger Following Digital Nerve Block Anesthesia.** John H. Garlock. *Annals of Surgery*, Volume XCIV, December, 1931.

The practice of operating on the distal half of the finger with the aid of digital nerve block anesthesia is almost universal. All textbooks speak of the ease with which it may be done. The procedure is probably executed daily hundreds of times the world over.

The author, however, has seen four cases of gangrene of the finger following this procedure within the past two years, showing that the procedure is not without danger and presents serious drawbacks as it is ordinarily carried out. These cases developed a dry gangrene of the finger distal to the point of injection of the Novocain necessitating amputation. He believes that there is a real lesson to be learned from these four cases and states that it is distinctly hazardous to use a tourniquet of narrow caliber because the local tissue injury is more centralized. A broad application is safer. For the usual incision and drainage it is unnecessary to occlude the arterial supply by tightening the tourniquet as far as it can be pulled. The purpose of the tourniquet is to prevent rapid absorption of the anesthetic agent and not to obtain a bloodless field. If a bloodless field is necessary as when looking for foreign bodies, a properly applied Esmarch bandage is more effective and certainly safer. He believes that if these facts are remembered and the necessary precautions taken that gangrene should never occur.

—LeRoy Downing Long.

**The Effects of Spinal Anesthesia on the Spinal Cord and It's Membranes—An Experimental Study,** by Loyal Davis, M.D., Hoke Haven, M.D., J. H. Givens, M.D., and John Emmett, M.D., Chicago. *Journal American Medical Association*, December 12, 1931.

The authors injected spinal anesthetic solutions in common use into the subarachnoid space in lumbosacral region of 37 dogs, examining entire spinal cord and meninges 3 days, 7 days, 30 days and 90 days later.

Five dogs died within 24 hours, after apparently having recovered from the paralysis of hind legs.

In all other cases there was an inflammatory reaction in leptomeninges, with fibrotic scarring in the dogs killed after 30 and 90 days, this being less pronounced in dorsal and cervical regions.

In the cord there were swelling and oedma of

cells, fragmentation of axis cylinders and degeneration of fiber tracts.

Sections of sound spinal cord taken from other dogs underwent lytic changes after 18 hours incubation in dilutions from 1:10 to 1:200 parts of anesthetic solution in physiologic solution of sodium chloride. Human blood corpuscles incubated in like solutions at body temperature underwent hemolysis in 1½ hours.

The authors conclude that spinal anesthetic solutions in common use (procaine base) are hemolytic and myelolytic; that they cause inflammation of the leptomeninges, retrograde degeneration of ganglion cells, swelling and fragmentation of axis cylinders, and degenerative changes in the fiber tracts of the cord.

**Comment.** Clinically, it appears that there are certain situations in which spinal anesthesia is desirable; but if the above findings are correct the surgeon will have to take the responsibility of deciding whether the clinical advantages outweigh in importance the permanent damage of meninges and cord.

It would be of interest and importance to learn whether the myelolytic changes sometimes reach the medulla. If so, there would be a good explanation of the high mortality—about 1:500—within the first 36 hours.

—LeRoy Long.

**Interparietal Hernias.** William E. Lower and Fred N. Hicken. *Annals of Surgery*, Volume XCIV, No. 6, December, 1931.

The term interparietal hernia is used by the authors to distinguish a group of rather unusual hernias which are located in the inguinal region between the various layers of the abdominal wall. They are classified anatomically as follows:

1. Properitoneal hernia includes all of those cases in which the hernial sac lies between the peritoneum and the transversalis fascia.

2. Interstitial hernia where the sac lies between the transversalis fascia and muscle, between the transversalis and internal oblique muscles or between the two oblique muscles.

3. Superficial hernia in which the sac lies between the skin and the aponeurosis of the external oblique muscle.

In interparietal hernia the sac may be monolocular or multilocular. The latter being the form present in the majority of cases.

As most interparietal hernias are either incarcerated or strangulated when seen immediate operative intervention is indicated. When symptoms of intestinal obstruction occur following an operation for inguinal or femoral hernia, an incarcerated properitoneal hernia should be suspected and immediate operative intervention instituted. When operating for hernia careful exposure of the entire inguinal canal should always be made



in order to prevent overlooking an intermuscular sac. When operating on an interparietal hernia the surgeon must remember that the strangulation may be at the internal ring, the neck of the interstitial diverticulum or sac, or the external ring. The abdomen never should be closed until the site of the obstruction has been found. As a rule careful exploration will reveal the incarcerated bowel in a diverticulum.

In an operation for interparietal hernia it is probably best to use the combined abdominal—inguinal route since this prevents injury to the bowel because the site of obstruction is more clearly revealed than when the inguinal approach is used.

It has been generally believed that interparietal hernias are of rather rare occurrence, but this belief is probably incorrect since the authors are able to report 587 cases from the literature. Good surgeons have been known to fail in the diagnosis of this type of hernia at the operating table. The inability to diagnose this condition preoperatively and the consequent high mortality rate indicate how superficial is our knowledge of this type of hernia.

—LeRoy Downing Long.

### UROLOGY and SYPHILOLOGY

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#### CLIPPINGS FROM THE UROLOGIC AND CUTANEOUS REVIEW

**Sterile Pyuria.** Fisch discusses (*Journal D'Urologie*, August, 1931), all those cases where the urine presents pus with an entire absence of demonstrable bacteria. In such cases we are prone to assume that tuberculosis is the most probable underlying cause. Fisch is inclined to believe that in many such cases there is no tuberculosis present. There is perhaps a hidden focus of infection somewhere in the urinary tract and if the urine were examined daily the probability is that a bacterium of some sort, and in a great majority of cases a bacterium of the colon group would be discovered.

He states that infections of the kidney are sometimes accomplished slowly, and that there is a period of kidney irritation which precedes the actual accomplishment of infection. In this irritative period we may find an excess of precipitated salts, along with desquamated epithelium and leucocytes. This irritation may be caused by chemical substances or by bacterial toxins, but in any case it prepares the soil for the ultimate reception of the colon bacillus.

Cases of persistent pyuria, therefore, even though aseptic must be interpreted as indicating a phase at least, perhaps a paramicrobic phase of microbic invasion and the idea of a true aseptic pyuria should hardly be accepted in any case.

**Bilateral Renal Calculosis.** P. Cifuentes states (*El Siglo Medico*, August 29, 1931), that while the occurrence of bilateral renal calculi has been estimated at about 15 per cent, this proportion of bilaterality is, in fact, as high as 30 or 40 per

cent. In many cases of bilateral calculi the problem to solve is very great. Both sides may show large calculi or one may be large while the other is small: or they may be small on both sides; or there may be a renal calculus on one side and a ureteral calculus on the other. Apart from this the condition of the kidneys, their function and the question of sepsis, influence the character of the affection. As a rule, the larger the stone the greater the parenchymal involvement and disturbance of renal function and the likelihood of infection. And yet cases are observed where with a very small calculi the changes that have occurred are greater than in others with large calculi. Why this difference in effect? It depends a great deal upon the question of urinary obstruction. A small stone producing obstruction to urinary excretion will compromise the kidney more rapidly than a large stone which is not obstructive.

Enlargement of the prostate was at one time held to be a natural consequence of old age. In 1840, Sir Benjamin Brodie wrote: "When the hair becomes gray and scant; when specks of earthly matter begin to be deposited in the tunics of the arteries; and when a white zone is formed at the margin of the cornea, at the same period the prostate gland usually—I might, perhaps, say invariably—becomes increased in size."

Perhaps the first direct attempt to incise the prostate without an open operation was made in 1815, at the battle of Waterloo, when Guthrie, a surgeon serving with the British forces, was consulted by a man suffering with an obvious obstruction at the neck of the bladder. Guthrie devised an instrument for cutting through the offending mass, later a few ingenious French surgeons took up this idea and invented numerous mechanical devices for biting away a portion of the prostate, but their results were unsatisfactory, and the method fell into disrepute.

Suprapubic cystotomy was first introduced into surgery by Pierre Franco in 1561, and then dropped out of sight for a hundred years until it was revived by Mercier in 1635. Again it disappeared from practice until 1723, when Douglas of London performed the operation in four cases successfully, and in 1727, Cheselden operated six times with one death. At this time suprapubic cystotomy was superseded by the perineal operation, and again had one hundred years' sleep until 1879, when under the auspices of Garsen and Peterson, it came to the fore again.

#### PROSTATE IN FOCAL INFECTION

At last the profession seems to be appreciating the importance of the prostate as a focus of infection in general disturbances of the body due to infection. Recently the author was asked to present this subject before an orthopedic congregation, it was pointed out that the prostate is as often cause of the disturbance due to focal infection as the teeth or tonsils. Special stress was laid upon the manner and routine of examining the prostate. First, repeated examination with stimulation by hot sitz baths. Second, many times nothing shows on routine microscopic and on culture of rich agar a profuse growth will be obtained.

## TUBERCULOSIS

Edited By

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### A Study of Tuberculosis in one Junior High School in Honolulu. S. E. Doolittle. *The American Review of Tuberculosis*. November, 1931.

The application of the tuberculosis school survey method to a community of complex racial groups will yield valuable epidemiological information. The percentage of tuberculous infection in Honolulu is not notably higher than in urban communities on the mainland in spite of a somewhat higher mortality rate. Of 1,437 students tested (aged 11 to 18 years) 75.57 percent had positive tuberculin reactions. Males showed a higher incidence of infection than females but adult pulmonary tuberculosis was more frequent among females and the percentage of demonstrable X-ray lesions was practically the same in both sexes. Infection was more frequent in the older age-groups. The average age of the group was 14.

The study of infection in relation to race shows, when the numbers are sufficient for any comparison, high rates of infection among the Chinese and low rates among the Portuguese, with the Japanese and part-Hawaiians falling between. There is some suggestion of correlation between death-rates and percentage of infection but the same findings do not apply in the Chest Clinic, where two-thirds of the cases are definite "contacts" and it is that probable that the percentage of infection in different racial groups having varying death-rates is affected only as the opportunity of intimate contact, largely in the home, is increased.

The application of various methods, as history taking, classroom observation by the teacher, notation of absent periods because of illness, weighing and measuring or temperature taking for the selection of cases for special examination will miss a large number of cases with demonstrable, potentially dangerous and even active disease. This study demonstrates that: (1) altho the history of home contact is difficult to obtain, incomplete and unsatisfactory, the group having positive histories showed 10 times as many positive as negative reactions. (2) The statement "whether well or not" as related by both pupil and teacher, showed little correlation either with tuberculous infection or demonstrable X-ray lesions, even of the adult pulmonary type. (3) Infection, as evidenced by positive skin tests, did not affect the periods of absence from school because of illness. (4) Neither infection nor demonstrable lung or lymph-node changes affected the percentage of children 10 percent or more underweight. (5) The relative weight gain showed the greatest alteration in the group with adult pulmonary disease and a barely perceptible variation where there were demonstrable latent childhood lesions or tuberculous infections. (6) Temperature records do not show appreciable differences.

The routine use of the intracutaneous test with at least 0.1 mgm. dosage of tuberculin and X-ray examination of all positive reactors will reveal many cases not only of latent childhood lesions

but of adult pulmonary lesions in a preclinical stage since the demonstrable X-ray lesions occurred almost entirely in those reacting positively to tuberculin. Of this group 1.2 percent showed adult pulmonary tuberculosis and 18.8 percent showed demonstrable lesions. Lesions were most frequent among reactors to dosages of 0.1 mgm. or less.

### Racial Susceptibility to Tuberculosis. Emil Bogen. *The American Review of Tuberculosis*. November, 1931.

This study was made in Olive View, California, on 4,730 patients consisting of about one-half native born Americans; one-fourth Mexicans; 5 percent each of English, Irish, and Germans; 4 percent each of Italians. Negroes and Scandinavians and 2 percent each of Orientals, Slavs and Jews with a small number of other nationalities and unknowns. The author concludes that the greatest discrepancy between the death rates from tuberculosis in patients of different nationalities, in his institution, at least, arises from the fact that some groups are admitted early in the disease, and others late and bears little relationship to any innate differences in their reaction to infection after it has reached a certain stage. He does not imply that there are not great differences in the extent of tuberculosis among the different groups in the community, nor that the mortality rates among these groups do not vary widely as it was this observation which prompted the study. He does maintain however, that these differences tend to disappear if the subjects are taken in the same stage of the disease and subjected to similar treatment. The importance of early diagnosis and treatment is again emphasized from this study. Those groups who are more accessible to public-health propaganda, more concerned about their health and more accustomed to consulting their physicians and public-health agencies, are more apt to come in early which in itself tends to cut down the exposure of their families and friends. This is evidently a matter of environment and education, rather than of innate genetic factors. "If these findings be generally confirmed, efforts against the environmental factors in the spread of tuberculosis may continue without fear of the hypothetical biological phenomena of racial and individual inherited susceptibility to the disease which have been conjured up to condemn such activities and justify neglect."

### Koumiss in the Dietetic Treatment of Pulmonary Tuberculosis. Charles L. Rubenstein. *The American Review of Tuberculosis*. November, 1931.

Koumiss—a fermentation product of mare's milk making a pleasant tasting and easily digested food beverage—has long been used with marked success in the dietetic treatment of pulmonary tuberculosis in Western Europe and parts of Asia. It is recommended for its ideal balancing of albumin, fats, carbohydrates and mineral salts, which, with its quick assimilation by the body, make it preferable to other dietetic methods of treatment. The nature of koumiss treatment resembles "irritation therapy" closely as it is apt to produce unfavorable reactions in large doses. In therapeutic doses it increases the immunobiological properties of the organism. It also has diuretic and sedative properties, im-



proves the general blood picture and the sputum becomes more fluid under its influence, thus making expectoration easier. Since it often causes characteristic reactions consisting of fever, hemoptysis and aggravation of the lung condition when taken in over-doses before tolerance is established, a careful selection of cases, exact dosages and continuous observation of the patient are necessary when the treatment is given. In the opinion of the author the high, dry regions such as Arizona, New Mexico, West Texas and Southern California offer favorable locations for the establishment of koumiss sanatoria.

**Tuberculous Infection Among School Children in a Rural Area in New York State. John H. Korn. The American Review of Tuberculosis. November, 1931.**

A study of the epidemiology of tuberculosis in a rural section of Cattaraugus County, New York, consisting of a careful tuberculin survey of apparently healthy school children showed an extremely low incidence of tuberculous infection among them since of the 1,103 children between the ages of 5 and 19 years who were tested, only 112 or 10.2 percent reacted positively. The infection rate in 13 villages was 12.6 percent as contrasted with 6.6 percent on the farms. The rate among those who have lived since birth within the country was 7.6 percent, while among those who have resided part of their lives outside the country, the rate was 21.1 percent.

**Tuberculosis in Adolescents. Margaret Witter Barnard, I. Burns Amberson, Jr., and Marion Franklin Loew. The American Review of Tuberculosis. May, 1931.**

Since tuberculous infection is widespread among children in cities it becomes necessary to learn how best to distinguish, among the infected children, those whose infection has already progressed to active disease, or may do so in the near future, in order to ensure for them adequate preventive or curative care. Because of the high cost of an intensive study of all children it is important to find some method of selecting from the general child population a smaller group which will include all infected children so that they may be intensively studied to determine the significance of their infections. While almost any factor relevant to tuberculosis might be chosen to act as a selective agent, serving as a "screen" to catch and hold in one group those children needing further study, it has been found from this study that many of the generally accepted factors are valueless for this purpose.

The following factors were considered as possible screens in this project: (1) General group characteristics—found to give no reliable clue as to the prevalence of infection since infected and non-infected children were evenly distributed thru-out the various groups; it was also found that economic and social status gave no clues for the same reason. (2) General health conditions—it was found impossible to predict in any way which children would be shown to have a tuberculous infection from a very thoro pediatric examination. (3) Weight—cheap and easy to apply but untrustworthy as only 12.2 percent of those infected and only 9.8 percent of those with lesions were 10 percent or more underweight.

(4) History of household contact with tuberculosis—while the incidence of infection is greater among children in contact with tuberculosis, this fails as an effective screen, first because of the difficulty of obtaining accurate information and second because in a large city tuberculosis infection is so widespread that household contact is only one of the many sources of infection to which children are exposed and if this only were used a large group in whom infection occurs outside the home would be ignored. (5) Tuberculin test—comparatively easy and inexpensive to apply and serves effectively to divide the children into two large groups, one those having some tuberculous infection and needing further study, the other those having no infection or having completely healed infections. The only limitation in the use of this screen is the difficulty of obtaining parental consent to giving the test. (6) X-ray—has the advantage that there is rarely any parental objection to it. It is expensive however and gives only limited information, for while it would separate out all those having demonstrable pulmonary and tracheobronchial lesions, in the absence of any other test it would be very difficult to differentiate the non-tuberculous lesions. It would also be difficult to tell from the X-ray alone in which clinical class the case should be placed; it also gives no information about the comparatively large group of children with tuberculous infection who are in need of care even tho the lesion is in such a position or of such pathological constitution that it cannot be seen on a film. In this study the 184 children with lesions would have been found but the other 500 who were also infected would have been missed. It is therefore concluded that to study thoroughly the incidence of tuberculous infection and disease in a group it is necessary to (1) test the entire group with tuberculin; (2) X-ray the positive reactors; (3) give a complete pediatric examination to all positive reactors; (4) decide on the best future care of positive reactors after a thorough study of the tuberculosis findings, general health conditions and amount of exposure to the disease.

Since the ultimate aim of this study was to help to group the children so that they might receive necessary and appropriate care for their tuberculosis and at the same time enjoy as much as possible the normal life and development of a child utmost care was exercised to obtain such treatment for each individual so that in curing the tuberculosis the child might not be ruined. It was usually found best to keep the child at home under careful clinic supervision and additional food and rest, educating his family at the same time to consider his condition a problem with which they must deal over a period of several years, rather than to send him to a sanatorium for a few months only to return him to the original family and school conditions where he soon lost all he gained at the sanatorium.

One thousand New York City public and parochial school children were studied in this project. It was found that of this group 673 or 67.3 percent gave positive reactions to the intracutaneous tuberculin test. Further study divided them into the following groups for super vision: (1) 205 cases for prophylactic treatment such as may be obtained in open-air schools, preventoria or summer camps. This group includes cases with small pulmonary or tracheobronchial lesions that are becoming calcified, suspects, posi-

tive reactors with negative X-rays who were in poor general condition and those apparently in good health but who were subjected to heavy exposure. (1) Fifteen cases of manifest disease needing sanatorium care or its equivalent. (3) Seventy-one apparently healed reactors with well calcified or fibrosed lesions. Of these group 1 is considered the most important since it includes those children for whom the balance has not yet swung which will determine whether they go ahead to the safety of group 3 or slip back into the dangers of group 2.

The community must provide the necessary observation and care before an investigation such as this can best serve its purpose—prevention of clinical disease in later years. A school similar to Lymanhurst in Minneapolis would ensure medical supervision, rest, food and a school program fitted to the individual's physical and mental capacity. If the child improved he could eventually be returned to his regular classes, if he failed to do well it would be detected at once and proper care arranged.

#### A Study of the Position of Primary Cavities in Pulmonary Tuberculosis. Henry C. Sweany, Carol E. Cook and Roy Kegerreis. *The American Review of Tuberculosis*. November, 1931.

Feeling that the idea of a small "incipient" lesion progressing slowly toward the base was erroneous and that most reinfections are of an acute nature, also that it is not at all certain that they come from the apical lesions the authors undertook this study in an effort to understand and explain something of the chain of events in the progress of the disease. The process of reinfection is predominately of an acute nature and whether it begins from the old apical lesions; from re-activated primary complexes; from a tuberculous bronchitis; from a haematogenous spread; from a ruptured lymph node or from the aërogenous route will not alter their principles.

They studied 268 cavities in 204 patients by means of stereoscopic X-ray, with respect to location and size. About 98 per cent of the early cavities seem to be situated on bronchi that are directed rather sharply posteriorly. Most of them are situated 1.5 to 3 cm. beneath the pleura corresponding to the 4th and 5th order of bronchi and consequently nearly all are "infraclavicular." Their distribution on the right and left sides appears to be directly proportional to the lung volume of the respective sides. Their position seems to indicate a common mechanical factor of origin and to suggest a bronchogenic origin resulting from a lack of clearing facilities of the particular bronchi or some similar mechanical principles.

A significant fact is that this group of patients represents a cross-section of early tuberculous re-infection in adults, representing average reinfections in patients who were fortunate enough to present some objective symptoms during relatively benign early stage before advanced spread resulted. The younger the patients the greater the mortality—there were also more fatalities when the reinfection involved many bronchi—but most of these patients improved on regular sanatorium routine. While a final analysis cannot be made for several years there is no reason to suspect any difference from the results with most moderately advanced tuberculosis patients.

#### Pleural Shock. C. H. Cocke. *The American Review of Tuberculosis*. November, 1931.

While the author has entered the pleural cavity about 5000 times in the past 17 years chiefly in pneumothorax work, having encountered pleural shock in 3 cases he points out the necessity for care in intrapleural exploration. Since, the infrequent, plural shock is severe and terrifying when it does occur, frequently being permanently damaging or immediately fatal, he deplores the assumption that these commonplace procedures are too easy and simple even to cause alarm or to need any special precaution.

#### Tuberculosis—A Family Disease. J. A. Myers, M.D., Ph. D. *Journal of the Outdoor Life*. October, 1930.

Tuberculous infection always precedes tuberculous disease. Therefore, by the tuberculin test we can detect the infected members of the family and often protect them against the disease. If exposure continues and the proper care is not given to the infected members, we may see the disease appear in one member of the family after another. In fact whole families may die out because contact is allowed to continue.

The most hopeful phase of tuberculosis prevention at present lies in the study of the contacts of detected cases. In the city of Minneapolis during the months of January, February and March, 1930, the Health Department brought to light 50 unsuspected cases of tuberculosis thru such follow-up studies. Since the incidence of tuberculous infection has so decreased in the United States, we are fast approaching the time when it will be possible to study all close contacts of tuberculous patients. When the time comes when we study our tuberculosis cases and their contacts as we now do a case of typhoid fever, tuberculosis will decrease faster than it does at present. When a case of typhoid fever is reported the health authorities search for and usually find the source of infection which is then brought under control thus controlling the spread of the disease. The fact that tuberculosis is a germ disease just as is typhoid fever and is just as contagious has not been generally recognized, perhaps because of the long interval frequently lapsing between infection and manifest disease.

### BOOK REVIEWS

**The Practice of Medicine.** By A. A. Stevens, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania; Visiting Physician to Philadelphia General and University Hospitals; Consulting Physician to St. Agnes' Hospital, Philadelphia. Third Edition. Entirely Reset. 1150 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1931. Cloth, \$8.00 net.

A most excellent book for quick reference, as the author has assimilated the work in the best of form. All the facts of present day knowledge of the subjects are given in the simplest terms. A short concise review of the pathology along with a full diagnosis and treatment is given in



each subject. This will be highly appreciated both by practitioner and student.

**The American Illustrated Medical Dictionary.** A Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. With the Pronunciation, Derivation, and Definition, by W. A. Newman Dorland, A.M., M.D., F.A.C.S., Lieut.-Colonel, M.R.C., U. S. Army; member of the committee on Nomenclature and classification of diseases of the American Medical Association: Editor of "American Pocket Medical Dictionary." Fifteenth Edition, Revised and Enlarged, with the Collaboration of E. C. I. Miller, M.D., Professor of Bacteriology and Biochemistry, Medical College of Virginia. W. B. Saunders Company, Philadelphia and London, 1931.

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## TUBERCULOSIS OF THE JEJUNUM

Franklin W. White and I. R. Jankelson, Boston (Journal A. M. A., Jan. 2, 1932), believe that local tuberculosis of the jejunum (without tuberculosis elsewhere in the bowel) as in two cases reported by them, is rare. They have found in the literature only a few autopsy reports. Involvement of the jejunum as part of a general intestinal tuberculosis is not at all uncommon. The two cases reported show some unusual features, such as the formation of chronic tuberculous hyperplasia in the small intestine, the presence of a sigule lesion and a single stricture in the jejunum. Tuberculosis is one of the common causes of chronic jejunal obstruction. The diagnosis of focal tuberculosis in the jejunum alone is very difficult unless obstruction occurs, since the early symptoms are mild and vague. The greatest difficulty is found in deciding the cause of a jejunal obstruction, whether due to tuberculosis, cancer or adhesions. The roentgen examination is very important. Several details are emphasized: the use of "scout" or plain films of the abdomen; the repeated study of the small intestine pattern in the first six hours after a barium meal, since evidence of partial obstruction is apt to be transitory. The treatment of tuberculous obstruction of the jejunum is surgical by choice and medical only by necessity. One of the cases reported illustrates the good results of operation in removing a single tuberculous focus in the jejunum when the infection in the lung was arrested.

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## OKLAHOMA PEDIATRIC SOCIETY

Papers read (in part) before the meeting at Oklahoma City, May 11, 1931

"The Nervous Mother and Her Baby" President's Address, Carroll M. Ponders, M.D., F.A.C.P.

"Scurvy In Children" - - - C. W. Arrendell, M.D., Ponca City

"Congenital Neurosyphilis, With Many Convulsions, and With Particular Reference to the Effect of Tryparsamide" - - T. H. McCarley, M.D., F.A.C.P., McAlester

"Diagnosis of Enlarged Thymus" - - - Fannie Lou Brittain, Oklahoma City

## THE NERVOUS MOTHER AND HER BABY

CARROLL M. PONDERS, M.D., F.A.C.P.,  
CHAIRMAN  
OKLAHOMA CITY

Today the babies of what might be termed the well to do and middle classes are nearly all born in hospitals. This is even true to a large extent of the poor. During their stay in the institution things generally go quite satisfactorily. At least the mother does comparatively little worrying. The baby is kept in the nursery (many of which have sound proof equipment) well out of her hearing. She knows little about its progress or well being and feels practically no responsibility. Her contact with it is limited to the short periods of time when it is put to the breast. There are times when the breast is not taken well, some of the food may be regurgitated in her presence or the baby may become perceptibly jaundiced. These things cause her some concern but there is the nurse, the interne, her own physician and the feeling of security that goes with her surroundings to reassure her.

About the tenth to the fourteenth day she and her baby go home. The private nurse (if there is one) may be discharged immediately or retained for a day or two.

When she is gone the mother may assume complete charge of the baby or a so called practical nurse may be employed to help. To the nervous type of young mother of today the responsibility of looking after a newborn baby is much heavier than when large families were more common. Her nights are restless and she is unable to relax into sound sleep. Even if the baby sleeps quietly she must inspect it several times during the night to see if all is well. If it is at all restless she may get practically no sleep. She is concerned about the way it nurses or the number of daily bowel movements. She has acquired a certain amount of information and misinformation and has vague ideas about any number of things that can go wrong with a young baby. The fact that many of the conditions of which she has been told are seen rarely even by her physician is not sufficiently clear to her to be of any comfort. In all the instructions that have been given her she has not been made to grasp the fact that babies, like young animals, naturally tend to be healthy and to grow

and develop in a normal sort of way. That they possess as a part of their very make up that dominant urge to live and to thrive in spite of a certain amount of indigestion or colic. She rather looks upon her baby as a prospective victim of all sorts of disastrous ailments.

Some mothers seem to feel that the natural tendency is for a baby to be puny and sickly—that good healthy growth and development can only result from what might be considered artificial measures. All these things bring about a disturbed mental state and cause almost constant worry. Added to this there is commonly a certain amount of physical weakness and exhaustion. It is a matter of fairly common knowledge that such things as worry, discontent and unhappiness bring about a distinctive chain of symptoms by acting upon the adrenals and upon the sympathetic side of the visceral nervous mechanism. There is a resulting imbalance in the autonomic nervous system, increased metabolism and impaired digestion. The activity of certain glands is inhibited and, directly or indirectly, the quantity and quality of the milk influenced. Holt stated that "worry, anxiety, fatigue, intense or prolonged nervous strain may so alter the milk as to make it disagree with a child who had previously thrived upon it or they may greatly diminish or even arrest the secretion."

The baby begins to be a poor sleeper, grows more uncomfortable and seems unable to relax. There may be much distress after nursing and the milk may be vomited. The bowels become either loose or constipated. The mother—and often the doctor as well—has difficulty in determining whether the baby is hungry or has colic. As a matter of fact, both conditions may be present. It appears uncomfortable most of the time, either crying or moving and squirming around. What sleeping it does is done in the morning hours. The restless period is more pronounced in the later afternoon and up until about midnight. The parents get little sleep. The mother's nervous system becomes more irritable and she suffers from the usual train of conditions accompanying such worries. The baby's condition becomes worse and a vicious circle is established. Obviously the situation is one that needs correcting. Just how is this to be done? The trouble cannot all be blamed on the mother's milk. That is only one factor. The baby has an autonomic nervous system of its own with

which we must reckon. It is one that is very immature in its development and probably through heredity is easily thrown out of balance. The condition may be entirely or only partially corrected through the food. Weighing the baby before and after nursing to determine the amount of food taken is impractical and, so far as we can see, a waste of time. Having samples of milk analyzed in the laboratory has never helped matters any. Feeding the mother to try to improve the amount and quality of her milk accomplishes little except to further upset her digestion. Advising her to get more rest is ridiculous. Taking the baby off the breast at once and substituting a proper formula might be the remedy. But one's training and conscience hardly permit him to do this except as a last resort. Most of them can be handled properly by being kept on the breast and given small amounts of artificial food just before or after each nursing. In most cases it must be given before the breast feeding in order to get them to take it. Our choice of complementary food is one of the powdered milk preparations. They are readily mixed in any strength and quantity and, due to certain changes resulting from their method of preparation, seem to be better borne than is ordinary milk. Where there are frequent, loose acid bowel movements protein milk is the most satisfactory. An ounce or two of the prepared food is generally given before each nursing. Some relief is seen almost immediately in many cases. Where there is a general hypertonic musculature, including the intestinal tract, varying amounts of atropine are required to bring about a comfortable relaxation. We generally start with one drop of a one to 2000 solution in half a spoonful of water, ten or fifteen minutes before each feeding. This is increased until either the baby has quit vomiting and is comfortable or there is a flushing of the skin following each dose. This often must be kept up for several months and withdrawn very gradually. Both breast and bottle should be kept up, if possible, until the baby is three months old. Once accustomed to the bottle the process can generally be reversed and the breast given first, followed by all it will take from the bottle. Many mothers find by experimenting that the baby is so much better on the bottle alone that it is soon weaned from the breast entirely. We have all been trained to avoid doing this but often



enough the results seem to justify the procedure.

In a good proportion of cases the baby soon becomes comfortable and sleeps more like a normal infant should. Other members of the family begin to get more rest and to do less worrying. With the disturbing elements removed the mother is in position to nurse her baby in as normal manner as is possible for her to do. A few of them will be able to return to breast feeding entirely. Many will get along well with both breast and bottle. Some babies will never get along well until put on the bottle entirely. A few babies will continue to be spastic, restless and uncomfortable a large part of the time for the first few months regardless of what food they have. They can be made to gain weight and to develop satisfactorily but they sleep poorly and keep the household awake till late each night. We must confess that we have no satisfactory means of coping with this situation. There is a possibility that the vagotonia and hypertonicity is associated with an inadequate function of the adrenals. This is suggested by the fact that nearly all these babies have a low blood sugar (Aldrich). For a long time we have felt that allergy is a factor. It is not unlikely that the intestinal tract of the young infant, being more permeable than at a later age, allows a certain amount of food substances to pass directly into the circulation without going through the complete process of digestion and assimilation. Recent work by Schloss on the precipitins of the blood tends to bear this out. Powdered or evaporated milks are generally better borne than are fresh cow's milk formulae. These babies are nearly all helped by relatively large doses of atropine. They are made worse by being taken out or excited. We have found no way of making good babies of them and believe the proper remedy is yet to be found. After reaching the age of five or six months nearly all of them tend to overcome the condition.

A nervous mother with a nervous baby often goes through with more distress during the first six months of the latter's postnatal life than she did before and during parturition. The treatment of these hypertonic, colicky babies is one of the most unsatisfactory problems in medicine. Fortunately their condition does not generally interfere with their growth and development if sufficient nourishment is given. They all tend to get over the

trouble by about the sixth month but some of them never become good sleepers. It is confidently hoped that future investigations will reveal the factors back of so much suffering and furnish us with a remedy.

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#### FULL-THICKNESS SKIN GRAFT IN CORRECTION OF SOFT TISSUE DEFORMITIES

According to Earl C. Padgett, Kansas City, Mo. (Journal A. M. A., Jan. 2, 1932), the redeeming features of the full-thickness skin graft are that it is obtained without much damage, the "take" is fairly certain with proper technic in a clean field, it gives good protection and a large surface may be covered with the minimum amount of ultimate contraction, in comparison with any other type of graft. A successful full-thickness skin graft will in most instances closely duplicate the natural surface. A decided practical advantage is that, as a rule, only one operation is necessary. The most brilliant application of a full-thickness skin graft is for the covering of raw surfaces obtained after cross-cutting or excision of contracting cicatricial tissue, about such regions as the front of the neck, the palm of the hand, and over the flexor surfaces of joints that can be extended or over the extensor surfaces of joints that can be flexed. In most severe deformities of this type it is practically the only method the use of which gives a satisfactory functional and cosmetic correction. After certain plastic or destructive operative procedures, a raw surface may remain for which a replacement covering is urgently needed, either for cosmetic reasons or to prevent a contractual deformity or both, for which the full-thickness skin graft very often fulfils the requirements better than other types of skin transplantation. There is also a miscellaneous group of applications such as "web" fingers, "port wine" marks of the face and destroyed eyebrows for which the full-thickness skin graft offers the most satisfactory covering.

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#### ACUTE SUPPURATIVE CONDITIONS OF HIP JOINT

Guy A. Caldwell, Shreveport, La. (Journal A. M. A., Jan. 2, 1932), presents a summary of the treatment and end-results of eighteen acute suppurative conditions of the hip joint. A review of the end-results indicates that ankylosis or pathologic dislocation is the usual sequel when the primary site of infection is in the intra-articular bony structures, whereas an excellent functional result is the rule when the process begins in the synovial membrane. Drainage of the hip by anterior or posterior incision does not limit joint motion when there is primary synovial infection. Ankylosis usually develops in spite of drainage by incisions when the condition is primarily osteomyelitis or epiphysitis draining by way of the hip joint. Roentgenograms should be made from time to time after drainage has been established in an acutely infected hip joint in order to determine whether there is bone involvement, and if bone destruction is apparent an effort should be made to provoke drainage by some other route than through the hip joint.

# SCURVY IN CHILDREN\*

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Nutritional disturbances during infancy and childhood, in spite of ever increasing knowledge, still challenge the medical profession. So long as there is no definite standard for uniform anatomical or physiological appraisal of infants and children, these problems will persist. However, many pitfalls will be avoided and hazards will be reduced to a much lower incidence if certain minimum diet requirements are observed. These requirements as set forth by Marriott may be summarized as follows: A proper diet must contain enough food substance to yield a sufficient amount of calories; it must contain a minimum amount of protein, carbohydrate, water, mineral salts and vitamins, A, B, C and D; it must also be digestible and free from harmful bacteria. A particular deficiency may be more readily recognized on the basis of these requirements, since the omission of any one of the factors will result in some nutritional disturbance. It will be the purpose of this paper to discuss that particular phase of nutritional deficiency resulting from failure to supply an adequate amount of antiscorbutic factor.

So much has been said about the vitamins in the last decade that it may seem trite to renew the subject. It is a well established fact that either breast milk or cow's milk should provide vitamin A; that wheat germ or yeast should supply vitamin B and that orange juice gives us vitamin C and sunshine vitamin D, yet it is surprising how many infants and children suffer from failure to obtain one or more of these factors. It is true that xerophthalmia is rarely seen; neither is beriberi though pellagra occurs rather frequently in the Southern states; scurvy and especially rickets are found to exist in a large number of children. It would seem that these conditions, to some extent, must be due to a failure to appreciate the value of vitamins on the part of both physicians and parents. For instance most mothers know nothing at all about vitamin C but have a vague belief that orange juice, prunes

and other fruits are given their children to "regulate the bowels" or do something, the exact nature of which is indefinite. Notwithstanding this attitude, one must not become too critical for science is very reluctant in showing us exactly how vitamins effect metabolism. There must be, indeed, some relationship between the antiscorbutic factor and other phases of nutrition that are unknown.

The infant at birth usually has stored up enough vitamin C to fulfill its growth requirement for some time. This is not always true since the diet of the expectant mother may not have included this factor. It may be suggested that it is possible for such conditions as prematurity, hemorrhagic disease of the new born, hypertonicity and anorexia could result from dietary deficiency of the mother. These conditions are especially noted in infants whose mothers have had their diets curtailed because of toxemia or for other reasons. Breast milk and also cow's milk contain a variable amount of vitamin C, and it is questionable if milk should ever be depended on to furnish an adequate supply. Milk which is boiled, pasteurized, dried, condensed or alkalized contains a negligible quantity. Many infants will neither take nor tolerate orange juice which is the antiscorbutic food most commonly used, and some may require much more than others to prevent the occurrence of a deficiency. Children who do not obtain sunshine exposure and those with other nutritional deficiencies are more prone to develop scurvy.

Early symptoms of scurvy are often overlooked or misinterpreted because of their gradual and insidious development. The first symptom is usually loss of appetite, followed by failure to gain weight at the expected rate and the development of a pallor which may be due to actual secondary anemia or to the loss in volume of blood serum. A dry condition of the skin contrasts this pallor with the moist, clammy pallor of rickets. This may be the complete symptomatology. However, as the condition continues the child very soon becomes restless, irritable, sleeps fit-

\*Read before Oklahoma Pediatric Society, Oklahoma City, Oklahoma, May 11, 1931.



fully, vomits more or less and later may evidence pain or discomfort, especially when handled. Activity of the knee jerks may be increased. Constipation usually results from the small amount of food actually taken. At any time during the course of the deficiency small or large hemorrhages occur under the skin or mucous membrane, which apparently are not always the result of the trauma; also there may be hematoma of the gums around the teeth and over erupting teeth; or at times there may be hematuria and gastric hemorrhage. These symptoms and signs may begin at any age though usually not before the fifth month, and may continue more or less intermittently until the child is able to take the required amount of foods containing the vitamin. Even then a large number of these patients do not grow satisfactorily and this may account for the small bony frame of many children and even of adults. While the time of dentition may not necessarily be delayed the deciduous teeth are usually soft and decay early and even the permanent teeth may be defective.

The recognition of early scurvy is made almost entirely on symptoms and signs, though the bone changes as shown by the X-ray may be useful to differentiate the condition from other disturbances. Pelkan describes the early bone changes in the following detail: 1. Ground glass appearance of the shaft due to disappearance of the normal shadows of the trabeculae. 2. Increased density along edges of epiphyseal centers of ossification giving an appearance of circumscribed ring. 3. Very thin bone cortex, appearing often only as a narrow line. 4. An irregular and broadened calcified epiphyseal line with an area of decreased density immediately back of line. 5. Small spur at outer edge of epiphyseal line and occasionally dislocation of entire epiphysis. Morse says the only positive way to make a diagnosis is to give an antiscorbutic and watch the results. He says, "improvement is immediate if the underlying cause is scurvy." This may not always be so simple because other factors are often involved.

The diet of mothers, both during pregnancy and during the lactating period, should be rich in vitamin C producing food. It may be worth while to suggest that the diet be built around fruits and vegetables instead of milk, eggs, meat and

cereals, as is the usual custom. During pregnancy sunshine appears to be an absolute essential for the best results. The beneficial effect of cod liver oil or viosterol is variable and should be prescribed only when it is impossible to obtain at least a minimum of sunshine exposure.

The early use of antiscorbutic foods for all infants regardless of age or type of feeding is emphatically advocated. Orange juice or tomato juice should be started during the second week after birth. One to four ounces of either should be given once or twice daily. If an infant does not enjoy or tolerate the antiscorbutic offered, other fruits and vegetables should be tried until a suitable one is found, and the amount given should always be increased as much as possible as the child grows older. In young infants that are artificially fed it is often an advantage to modify the cow's milk with one of the fruit juices. After the age of six months if the child will not take a sufficient amount his diet may be limited almost entirely to fruits and vegetables even to the exclusion of milk and cereals. Undoubtedly scurvy improves more rapidly when considerable sunshine exposure is obtained. The administration of blood by transfusion will also hasten recovery, and should be used when the anemia and pallor is very marked. Iron salts used in combination with copper gives promise of better results than that heretofore obtained when iron alone was used. General improvement of symptoms resulting from vitamin C deficiency is characterized by the return of a pink color of the skin, disappearance of the nervousness, relief of constipation, and especially an increase in the appetite and a more normal rate of growth. The increase in size of the long bones particularly is noted.

Optimum growth and development for every infant and child should be the ideal of all physicians and parents. Results toward this end will be more and more realized when all the available knowledge concerning nutrition is faithfully used. Physicians, indeed, should strive to "gain knowledge, expose superstition, fight meanness," to ever stand for lofty ideals and a keen sense of duty; always working on the principle that the value of anything is not the value to itself or in itself, but its value to someone else.

# CONGENITAL NEUROSYPHILIS With MANY CONVULSIONS.

## PARTICULAR REFERENCE TO EFFECT OF TRYPARSAMIDE—CASE REPORT

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MCALISTER

This little patient, a girl, age seven, was first seen by me early in September, 1929, and has been continuously under my observation and treatment up to the present. In November, 1929, and May, 1930, she was examined at the Dallas Medical and Surgical Clinic and some of the findings of the specialists of this clinic are included in this report.

*Family History:* Father living, age 33, with no subjective symptoms of ill health, but later found to have a 4 plus Kahn and 4 plus Wassermann. Mother living, age 31, but later found to have 3 plus Kahn and 3 plus Wassermann. One twin sister, and one brother, age 5, both living and well, with negative Kahn and Wassermann.

*Personal History:* A breast fed baby. Pertussis in severe form at age of three, otitis as complication. Hearing impaired ever since. She has not been subject to respiratory infections. The appetite is excellent and there is no history of digestive upsets. Tonsillectomy in 1927.

*History of Present Illness:* Prior to September 5, 1929, this child was in perfect health so far as the mother knows, except for headaches. About two years before this date, she began to have attacks of severe headaches. She would frequently come in from play and say that the whole top of her head was aching. At these times, she would want to lie down, and with the aid of aspirin, the attacks would usually wear off within 8 or 10 hours. These would occur with considerable frequency, but with no regularity. They were sometimes once a week, and sometimes there was a month between the attacks.

On September 5, 1929, the child was apparently in her usual good health. She went to school, came home and sat down

on the porch. She said that her toes stumbled over each other and that she could not walk. She went into the house and told her mother that she was going crazy. She went into the yard and fell, and had a severe convulsion. Her whole left side was paralyzed but cleared up by the next morning. In three weeks, another attack occurred. It was preceded by a headache and a blow on the head from a fall. She had seven convulsions which were clonic in type with chewing of the tongue. There was no foaming and no opisthotonos.

This child's condition as revealed by physical examination has varied little except the changes incident to growth and development during the year and a half I have been seeing her. She is a well nourished girl above an average in height and weight, of normal temperature, pulse and blood-pressure. The teeth are of normal conformation and are not decayed. The left pupil is smaller than the right. There is mild, cervical and tonsillar adenopathy. The neck, chest, abdomen and spine are negative. The reflexes are normal. Ophthalmic examination shows no signs of increased intracranial pressure, the fundus negative.

*X-ray examination* of the head by Dr. Davis Spangler: The sinuses are clear. The sella is normal. The mastoids are of the membranous type, quite small. There are numerous gyral depressions over the occipital bone and the posterior half of the parietal, with apparently some thickening of the inner table of the parietal above this area. There is slight widening of the suture lines and a few of the gyral depressions on the frontal bone. X-ray findings suggest a beginning intracranial pressure which is producing some depression of the inner table and widening of the suture lines, but which has not pro-



gressed sufficiently to cause any erosion of the sella.

The Kahn and Wassermann reactions of both the blood and spinal fluid were found strongly positive.

Treatment instituted as soon as diagnosis was made consisted of K. I. gr. 5, t. i. d., courses of 8 doses of sulpharsphenamine followed by 12 to 16 doses of bismuth or mercury given intramuscularly. During the 14 months this treatment was continued, the child continued to complain almost daily of headache and convulsions recurred every 4 to 6 weeks. These were prone to occur when an intermission in treatment was attempted. Spinal drainage was done twice, in each instance, precipitating repeated convulsions. It was found that the convulsions were more readily controlled by Mag. Sulph. given intramuscularly than by any other form of treatment that was tried.

January 15, 1931, I gave tryparsamide, .5 gm. intravenously and each succeeding week, gave 1 gm. until six doses were given. Mercurial inunctions were given during the first two weeks of this treatment. The headache, which had been so persistent, was relieved. An intermission in treatment was taken and after four weeks, a light convulsion occurred. Weekly injections of tryparsamide were resumed and are being continued. This little patient, who is a very lovable child, is now free from headache, her hearing is normal and she has had no more convulsions. I dare not discontinue treatment and tryparsamide will remain an essential part of the treatment as long as the effect is as happy as it now seems to be.

Reese<sup>1</sup> states in an article of comparatively recent date: "I am convinced more than ever that tryparsamide is superior to all other forms of intravenous arsenical treatment in neurosyphilis. I must correct the statement often referred to in reports dealing with tryparsamide that the drug carries a menace to the optic nerves. Optic atrophy is not caused by arsenicals and especially not by tryparsamide, but by the disease itself. If the eye studies reveal impairment of the optic tracts, one should not use arsenicals, or should employ them very cautiously. The tonic effect of arsenical medications stimulates the present interstitial and periopical inflammation and will lead to advancement of the disease, resulting in visual constriction and even optic atrophy. I would advocate the

same treatment for the congenital forms as for the acquired forms of neurosyphilis."

To quote a paragraph from Solomon<sup>2</sup>, "I would call attention to the long continued treatment that is many times required to produce a serological recovery. It is our usual custom when using tryparsamide to continue it indefinitely and usually without interruption until the desired result is at hand. Having sufficient optimism to believe that a serological recovery is nearly always available, we persevere, however long it may take, week after week, month after month, and year after year. The highest number of tryparsamide injections which we have given to any one patient up to now is 183 injections in a period of little less than five years. There is rarely any evidence of cumulative effects or lack of ability of patients to handle the drug. Our present working motto is that a serological arrest, at any rate, is to be expected in practically every case with the methods now available, and it is our problem to use the methods to the best advantage and to continue them until the desired result is obtained."

1. Hans H. Reese: Antisyphilitic treatment of Syphilis of the Central Nervous System, J. A. M. A., February 15, 1930.

2. H. C. Solomon: The Treatment of Neurosyphilis, Annals of Internal Medicine, November, 1929.

#### WINTER CLOUDS INCREASE RACHITIC TENDENCY

Mothers can't all take their babies south in the winter—and if they could most physicians would still prescribe regular intake of Vitamin D to make sure that the infant was adequately protected.

For infants deprived of breast milk, S.M.A. is a good diet material not only because it resembles breast milk, but also because it prevents rickets. This claim has been accepted by the A.M.A. Committee on Foods and there is a wealth of clinical evidence to back it up, because S.M.A. has been anti-rachitic from the very beginning, back in 1913.

Tens of thousands of infants have done exceptionally well on S.M.A. prescribed by physicians without a single case of rickets developing. A large hospital in an area where there is the least sunshine of any section of the United States even uses S.M.A. routinely to cure rickets when the cases are not too far advanced.

S.M.A. has been anti-rachitic from the very beginning and is still the only anti-rachitic breast milk adaptation.

# DIAGNOSIS OF ENLARGED THYMUS

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Much has been written, but comparatively little is known about the thymus gland. It is an interesting subject because the consequences of an enlarged thymus may be grave, but when the symptoms are recognized early and treatment is given, the results are spectacular.

The failure to recognize the signs of an enlarged thymus has caused many sudden deaths in apparently healthy children. After many thymic deaths on the operating table, it has become routine in many hospitals to X-ray children before a general anesthetic is given. Therefore, it is a subject which concerns not only the pediatrician, but also the oto-laryngologist and the general surgeon as well as the anesthetist. Dr. Harris P. Mosher<sup>1</sup> radiographed 4,820 children of tonsil and adenoid age and found enlarged thymuses in seven percent. It is not necessary to routinely X-ray children before an anesthetic is given, but a pediatrician should not refer a case to a surgeon without first inquiring into thymic history.

It is not the purpose of this paper to go into detail as to the diagnosis of an enlarged thymus by means of the radiogram, but rather to review the signs and symptoms as evidenced by the patient. The case reports are selected from a group of fourteen children with enlarged thymus seen in the out-patient department of the Crippled Children's Hospital at Oklahoma City, and in private practice. There are many symptoms which no doubt puzzled the physician of a century ago which are now recognized immediately as those of an enlarged thymus.

*Cyanosis* is one of the most common symptoms of hyperplasia of the thymus. Bloom<sup>2</sup> contends that cyanosis beginning before the second week of life is seldom enlarged thymus. Sixty per cent of his cases had cyanosis. In this series of cases fifty per cent had cyanosis, two of which were seen during the first week of life. In a group of 54 cases reported by Morgan, Rolph and Brown<sup>3</sup>, eight had cyanosis at birth. It may last only a few minutes and be accompanied by convulsions. If it is

continuous, it is well to suspect other pathology rather than hypertrophied thymus.

CASE 1. M. E. L., a girl, weighing 7 pounds, 7 ounces, was first seen at three weeks of age with a history of cyanosis, for which oxygen had been given at the hospital during the first week of life. She had vomiting, inspiratory stridor, convulsions, and noisy nasal breathing. The cyanosis and stridor were not constant, but were intermittent. After going home from the hospital she had another attack of cyanosis, twitching, and choking. An X-ray of the chest was made and an enlarged thymus was found pushing the heart to the left side. She was given three X-ray treatments and her cyanosis and convulsions became less marked. After the fourth treatment all symptoms disappeared and when last heard from at six months of age, she had had no return of symptoms.

All cases of unexplained *convulsions* should be X-rayed for enlarged thymus, but we should also eliminate tetany and the various types of meningitis. Bloom<sup>2</sup> found convulsions present in 10 per cent of his cases. They were present in 50 per cent of this series.

CASE 2. A. J. A., a boy, age 2½ years, came into the clinic at the Crippled Children's Hospital with a history of convulsions and cyanosis with no fever. The history revealed that he had had cyanosis at three months of age, following the measles. An X-ray showed an enlarged thymus and the symptoms cleared up after treatment. At nine months he had pneumonia and again had an enlarged thymus and the symptoms cleared up after treatment. He had had no more symptoms until two months ago, when he developed whooping cough, following which he had difficulty in breathing, convulsions, and cyanosis every few days. He was easily frightened and extremely nervous. X-rays showed that the thymus was again enlarged. He was given three X-ray treatments and has had no more symptoms.

The interesting findings in this case were that the thymus enlargement followed, in three instances, an acute infection. During the late years, research has found that the thymus gland may be affected by infections and the state of the nutrition of the body. A child who has had an enlarged thymus, in spite of the fact that he has had treatment, should be watched for return of the symptoms with an acute infection. This child was two and one-half years old, which is rather unusual in that enlarged thymus rarely reappears at this age.

*Vomiting.* Projectile vomiting resemb-



ling pylorospasm, accompanies an enlarged thymus so often that it may be considered a symptom, Rubin<sup>4</sup> states that X-ray showed enlarged thymus in thirteen cases of pylorospasm and in only one of seven cases of pyloric stenosis. Four of the fourteen cases had pylorospasm and were relieved by X-ray treatments. They were temporarily relieved by atropine, but after treatment were able to discontinue the atropine. In one case of pylorospasm the thymus was X-rayed even though there were no other symptoms other than projectile vomiting, and an enlarged thymus was found. The gland decreased in size and the vomiting ceased after treatment.

*Difficult swallowing* is a common symptom of enlarged thymus. It was present in three of the fourteen cases.

CASE 3. J. M. B., a boy, was noticed to have cyanosis at birth. This had cleared up the following day, and only occurred when the child was crying. At twelve days of age he began to have difficulty in swallowing, and projectile vomiting and cried a greater part of the time. A few days later he was put on atropine, which relieved him to some extent. He then developed a noisy nasal breathing, and a crowing sound, with a dry, brassy cough. He continued to be a very nervous child and slept about three of the twenty-four hours. He was also quite spastic. The difficulty in swallowing was very distressing. The diagnosis of enlarged thymus was made and confirmed by X-ray. Symptoms gradually cleared up with treatment.

*Noisy nasal breathing* resembling snuffles was found in three of these cases and syphilis was ruled out in each case. It cleared up with X-ray treatment. Morgan, Rolph, & Brown<sup>5</sup> also report this as one of the symptoms. I do not know why this should be unless it is because the adenoid tissue is also hypertrophied to such an extent that it causes some obstruction and prevents drainage into the pharynx.

CASE 4. M. J. B., a girl, weight 12 pounds, 1 ounce, came in at the age of four months with the history of noisy nasal breathing, difficult swallowing, and cyanosis at times. She had vomited a part of almost every meal since birth and had had colic practically every day. She was a very nervous child, was quite spastic, and had attacks of syncope. There was a birth injury to the left side of her chest, but it was not thought that there was an injury to the head. She had slept with her head retracted when a small baby and her mother noticed that she breathed easier in this position. A Wassermann was taken to eliminate syphilis and was found to be negative. There was no family history of syphilis. She had her last treatment a week ago and her vomiting has ceased, and her breathing is practically normal. She no longer has cyanosis. Her attacks of syncope are less marked and she rarely has colic.

This case is interesting because of the wide variety of symptoms. 21 per cent of these patients have been colicky babies. This was the only one who had syncope, and one of the two cases that had retraction of the head. The latter is a more rare symptom, but should not be neglected. Some children with enlarged thymuses sleep in this position because it is not so difficult to breathe.

*Breath holding*, which through the ages has frightened mothers, is often seen in enlarged thymus cases.

This is illustrated by CASE 5. C. M., a boy, who came into the Crippled Children's Hospital at the age of 19 months with the history of holding his breath when crying until he would turn blue. Sometimes he lapsed into unconsciousness and would fall to the floor. This was followed by a few hours of stupor. He had had four bad attacks and was unconscious for about five minutes during each spell. An enlarged thymus was suspected and proven by X-ray, and the breath holding and cyanosis cleared up after treatment.

Morgan, Rolph & Brown<sup>5</sup> found this to be the most common symptom of thymic disturbances, occurring in 29 of the 54 cases reported, but breath holding was found in only two of these cases. It may oftentimes be confused with petit mal.

*Cough* is another frequent symptom occurring in five of these cases. In enlarged thymus it has been described by Blackfan and Little<sup>6</sup> as that of a brassy cough of a man with aortic aneurism. Often the cough is more severe at night and is paroxysmal. In one case cough and dyspnea were the only symptoms.

Another symptom which is suggestive of an enlarged thymus and which has not been recognized until recently is that of *inspiratory stridor*. Six of this series of cases had a stridor which occurred spasmodically and cleared up with X-ray treatment.

A child with a chronic laryngeal stridor without other thymic symptoms should have a laryngoscopic examination to eliminate any pathology in that region, and also an examination of the chest and sinuses.

*Dyspnea* is quite a common symptom occurring in 42 per cent of this series.

CASE 6. L. D., a boy, was first seen at 5 months of age. There was a history of the mother having lost several children with enlarged thymuses. At 2 months of age this child began to have attacks of difficult breathing and cyanosis. A radiogram showed an enlarged thymus and treatments were given. No more symptoms were noticed for 3 months, when cyanosis

and dyspnea returned and a brassy cough and difficult swallowing were noticed. An X-ray picture again showed an enlarged thymus which cleared up after treatment.

This case is interesting because of the family history of thymic deaths. Dr. H. L. Moore, in his discussion of a paper given by Wasson<sup>6</sup> states that he has often seen enlarged thymus in more than one member of a family.

Other conditions which have been reported as being associated with hypertrophied thymus are eczema, which was found in two of these cases, and an unusual amount of gas in the stomach and intestines, noticed in three cases, and asthma, found in one case. Palpable lymph glands and hypertrophied tonsils were observed in a large percentage of the children. Irritability and insomnia were noticed in five of the fourteen cases.

Blackfan and Little<sup>5</sup> were able to percuss out an enlarged thymus and confirm the diagnosis by X-ray. "Dullness was determined most definitely and readily with the body in a horizontal position, the head resting on the occiput and in semi-flexion, the arms extended and clasped about the head and the legs slightly flexed. The head and the vertebral column were held in the medium position. Any deviation from this position, as for instance forcibly turning the head to one side or the other, caused a variation in the percussion note" . . . "The presence or absence of dullness in the second interspace to the left of the mediastinal line was used to differentiate between a "negative" and a "positive" thymus. We regarded the thymus as "negative" if dullness extended not over seven-eighths of an inch to the left and if there was no dullness or if it was not over half an inch to the right of this point. Dullness to the second interspace both to the right and to the left of the midsternal line and continuous with the cardiac dullness below was regarded as a "positive" thymus."

The absence of X-ray evidence of an enlarged thymus is not considered as definite proof that this condition is not present. Rubin<sup>4</sup> states that at Children's Memorial Hospital roentgen ray failed to show enlargement of the mediastinal shadow in three cases, in which, at autopsy, thymuses weighing 50, 35, and 30 grams respectively were found.

A lateral picture should always be taken as well as an anterior-posterior view, for

many cases which have the most pressure symptoms will oftentimes not have lateral enlargement.

In conclusion, it might be said that one should be on the alert for this type of case, as it is not an uncommon condition, but we should not be too prone to treat with roentgen ray every baby with one or two symptoms and a little lateral enlargement. These cases have not been followed to adult life, and it is not known what untoward results might arise from over-treatment.

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#### CAUSE OF "PAINFUL BREASTS" AND TREATMENT BY MEANS OF OVIATION RESIDUE

Max Cutler, New York (*Journal A. M. A.*, April 11, 1931), states that clinical pathologic and experimental evidence clearly indicates that excessive epithelial and connective tissue hyperplasia giving rise to diffuse generalized pain and nodularity in the breasts in relation to menstruation may be due to excessive corpus luteum stimulation. In patients suffering from "painful breasts" the corpus luteum dominates the ovarian metabolism and by inducing an excessive epithelial and connective tissue hyperplasia causes diffuse pain and generalized nodularity of the breasts. At the same time the overactive corpus luteum suppresses ovulation and exerts an estrus-inhibiting influence leading to a hypofunction of the follicular and interstitial elements of the ovary, as indicated by the short and scanty menstrual periods in these cases. The administration of ovarian residue apparently tends to cause a cessation of abnormal epithelial and connective tissue hyperplasia by counteracting the excessive corpus luteum secretion, thereby diminishing or removing its overstimulating influence of the breast elements. The administration of ovarian residue by mouth has resulted in relief of pain and tenderness in a number of patients suffering from this condition. A definite softening of the breasts and actual disappearance of painful nodules have been observed in some cases. The menstrual periods in many are restored to a more normal state and the general state of the patients is improved.



# A REPORT OF SIX HUNDRED AND FOUR CASES OF ACUTE APPENDICITIS

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This is a study of 604 consecutive cases treated by a staff of approximately fifteen surgeons at the State University Hospital, Oklahoma City, from the year 1922 to 1930. The literature was briefly reviewed.

The treatment of acute appendicitis while the disease is limited to the appendix is satisfactory; however, the treatment of the disease after spreading beyond the appendix, is a question of great dispute. It should be standardized for the benefit of the patient in the hands of the average surgeon. A master surgeon may use methods of treatment with great success which, when attempted by the majority of the profession, would prove devastating. During the past decade, there has been an apparent increase in the death rate due to appendicitis. Recent figures from the Bureau of Vital Statistics attribute 25,000 deaths annually to appendicitis<sup>1</sup>. This is an increase of 30 percent in the mortality in the past ten years. A similar increase has been reported in Great Britain. The mortality is due to the dangers of infection spreading beyond the appendix. The urgent necessity is that of immediately consulting a surgeon when abdominal pain occurs for it is the delayed cases that are fatal.

## DIAGNOSIS

The usual symptoms and findings were recorded in 70% of the cases studied. The remaining 30% were atypical which makes the diagnosis difficult and accounts for many of the delayed cases. However, some of the findings are always present.

Abdominal pain was present in 100% of the cases. It is usually of rather sudden onset in the epigastrium, cramping in character, and localizing after about six hours, as a dull aching soreness in the right lower quadrant of the abdomen. Pain starting in the right side is rarely due to appendicitis although a physician friend suffered

a peritonitis from a ruptured appendix because the pain had always been in the right side. He would not agree to the correct diagnosis. Sharp lancinating pain is rarely due to appendicitis. The pain may radiate to the genitalia as observed in five cases of the series.

Nausea with, or without vomiting, was present in 75% of the cases. This is a relatively unimportant symptom.

Fever and leukocytosis, which are very valuable both in diagnosis and prognosis, occurred in 92% of the cases. Fever above 100°F in the first twenty-four hours of the disease is very unusual, and in any stage of the disease is strongly suggestive of perforation.

### 100°F OR BELOW

385 Cases 63.2%  
5% Required drainage

### ABOVE 100°F

221 Cases 36.5%  
27% Required drainage

Localized tenderness is the most important finding in the diagnosis of acute appendicitis. It occurred in 92.7% of the cases in this series. Diffuse tenderness is usually due to some other disease. Rigidity is closely associated with localized tenderness.

The diagnosis of acute appendicitis is relatively easy compared to the difficulty in knowing the exact changes the scalpel will reveal since the clinical manifestations and pathological findings are often not in direct proportion. It is very important to correctly differentiate a gangrenous or late perforating appendix from an early diffusing peritonitis for the treatment differs. Deaver<sup>2</sup> gives the following findings in diffusing peritonitis: The patient looks sick but does not have the peritonitis facies. Pain is more pronounced and referred over a greater area. There is a larger area of rigidity and tenderness.

Peristaltic sounds are diminished or absent. Abdominal breathing is more limited. Peristaltic sounds around the inflamed area corresponding to the area of peritoneal irritation are increased.

Livingston<sup>15</sup> finds cutaneous hyperesthesia in a triangle bounded by a line from the symphysis pubis to the umbilicus, from the umbilicus to the anterior spine, and from the anterior superior spine to the symphysis pubis, the most valuable sign in diagnosing acute appendicitis. It occurred in 86% of a series of 400 cases. In the remaining negative cases with appendicitis, most of the appendices were either gangrenous or ruptured. If the hyperesthesia extends beyond this area, particularly to follow the course of the intercostal nerves, it is due to an intercostal neuralgia described by J. B. Carnett<sup>4</sup>. This may occasionally be associated with an acute appendicitis but usually is not.

Baily Hamilton uses the hyperesthesia as described by Livingston as a criterion in the differentiation between late acute appendicitis and early diffusing peritonitis. In addition to this, the presence of much vomiting, increased pulse over 10 per minute within an hour, age under five years, recent ingestion of a powerful cathartic, are his indications for operation while the delayed treatment is being carried out.

There are many unusual symptoms such as chills, diarrhea, etc., which are more frequent than one is impressed by reading the literature. This is due to the preoccupied mind of the average clinical clerk.

Circumscribed and diffuse peritonitis are readily diagnosed.

#### TREATMENT

Many of the leading surgeons of the world have different views as to the treatment of diffusing peritonitis. It is not so striking to find this as both schools have different methods, both of which have their advantages. The question is: Delay operative treatment with physiological treatment until localization or absorption occurs, or incise immediately. I have collected, at random, from the literature, the following accumulated statistics on mortality of acute appendicitis.

#### IMMEDIATE

Name	Cases	Mortality
Deaver <sup>8</sup>	1358	10.5%
Love <sup>11</sup>	2716	6.7%
Eliason <sup>9</sup>	675	5.3%

Ashurst <sup>1</sup>	247	13.7%
Flint	1080	5.7%
Turner <sup>11</sup>	2252	3.5%
Greenwood <sup>11</sup>	266	0
Catch <sup>10</sup>	262	8.7%
Weeden <sup>19</sup>	1588	4.9%
Quain <sup>18</sup>	1000	2.5%

#### DELAYED

Name	Cases	Mortality
Deaver <sup>8</sup>	1358	3.7 %
Hornecke	1500	3. %
Bratund	700	2.5 %
Guery <sup>12</sup>	688	.15%
Hamilton <sup>13</sup>	315	1.75%
Love <sup>11</sup>	607	3.8 %
This series	604	8.62%

In University Hospital, Oklahoma City, Oklahoma, the delayed treatment is practiced. Of the cases reviewed, there were 52 deaths, a mortality of 8.62%. Two of the deaths were complicated with diabetes; two had gangrene of the terminal ileum; one had volvulus of the ileum with an inflamed appendix acting as a tie; four died on the day of admission; eighteen of the fatal cases were operated upon when a diffusing peritonitis existed; and one death in the nondrainage cases due to B. Coli peritonitis. It is customary here, to drain the circumscribed peritonitis if resolution does not occur during the Fowler, Murphy, and Ochsner treatments as advocated by Deaver<sup>7</sup>. Usually the appendix is not removed until a later date. Of these cases only about 4% returned for appendectomy. However, 14 returned with recurrent abscesses and one developed a fatal peritonitis.

In reviewing the reports illustrated in table (1); the cause of the difference in opinion and mortality was noted. The surgeons having low mortalities, especially Quain<sup>18</sup>, Turner and Eliason<sup>9</sup>, advocating the immediate treatment, all used extensive drainage of the wick type as the Mikulicz<sup>19</sup> or Coffey<sup>5</sup> drain. Without this type of drainage, the mortality soars to about 14%. The immediate treatment is further favored by removal of many delayed thick walled or gangrenous appendices that would probably be diagnosed as early diffusing peritonitis and become so if not removed.

The work of Plant<sup>16</sup> contraindicates the use of morphine in appendicitis for he has shown that it both increases the tone and rate of peristalsis in the usual doses in man as well as in lower animals. This is contrary to the usual idea but Hamilton<sup>15</sup> using the delayed treatment, omitted morphine and its derivatives to pre-



serve the clinical findings in a series of 315 cases of acute appendicitis and reports 1.75% mortality and that the patient rarely has pain unless the appendix is as yet unperforated, or that the pus is spreading beyond the walled off abscess.

#### SUMMARY

1. The education of the people to the dangers of appendicitis.

2. Careful examination of late cases of appendicitis endeavoring not to operate upon early diffusing peritonitis, nor to fail to operate upon late gangrenous or unruptured cases.

3. Delayed treatment of diffuse and diffusing peritonitis: High Fowler's position, nothing by mouth, proctoclysis of normal saline, no morphine or its derivatives, and absolute rest.

4. Drainage of localized abscesses and removal of the appendix at the same time if possible, making the incision always lateral to the greatest point of tenderness and using the Coffey drain, gauze packs to protect the clean tissues, draining the kidney pouch and pelvis when necessary, and keeping the drain as close to the lateral abdominal wall as possible.

5. Extensive use of Coffey's quarantine principles when, by error, a diffusing peritonitis is found at operation and always removing the appendix in such cases.

6. If an abscess is drained, the patient should have an appendectomy before leaving the hospital.

7. The free use of glucose and saline intravenously and saline under the skin. Glucose per rectum is not absorbed and delays the absorption of the water. Normal saline is preferable.

8. Immediate operation on the following type cases:

1. Children under 5 years of age.
2. Intra-abdominal rupture of localized abscess.
3. Rapid increasing pulse rate while under delayed treatment.
4. Continuous vomiting.
5. When the disease cannot be clearly differentiated from some other intra-abdominal condition requiring immediate intervention.

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#### INFANTILE ECZEMA: STUDY BASED ON ONE HUNDRED AND SIXTY CASES

Francis Scott Smyth, San Francisco, Katherine M. Bain, St. Louis, and Minnola Stallings, San Francisco (Journal A. M. A., Oct. 31, 1931), consider eczema as the response of the skin to irritation. The source of that irritation may be single or multiple, related to local infection, to cold or heat, or to intolerance of an allergic nature. The allergen frequency is not entirely explained by contact but probably on some immunochemical mechanism. While skin tests are often of great value, they rarely develop before the fourth month and may be lacking entirely. In other words, the capacity to form skin tests and the clinical reactivity are independent variables but frequently related. The skin of infants is particularly susceptible to trauma and to sudden changes of temperature. Such injury may itself establish a vicious circle. With increasing age this may entirely disappear. In other instances allergy must be considered as an additional factor. One hundred and sixty patients are surveyed by the authors with regard to the various factors. On the basis of their observations they believe that in the treatment of eczema the diet must not be so restricted as to prevent normal nutritions, since sweeping restrictions may be dangerous.

# APPENDICITIS and ITS MORTALITY\*

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SHAWNEE

So much has been said about appendicitis, in general, that to speak further of it, one risks making himself a bore. But the fact remains that there are over five hundred thousand cases of appendicitis in the United States and Canada annually, of which twenty-five thousand die, making a mortality of five per cent which is as great as the combined mortality of gall stones, ectopic pregnancies, pyosalpinx and diseases of the pancreas, spleen and thyroid, and almost equal to the combined mortality of gastric and duodenal ulcers, intestinal obstruction and gall stones.

Such a mortality is appalling, especially so since most of it is due to negligence, more often on the part of the patient or patient's family, and occasionally due to negligence on the part of the attending physician. The physician's negligence being due, not so often to a mistaken diagnosis, as to the "take a chance" attitude, or in not insisting emphatically enough on immediate hospitalization and early operation. The administration of morphine and cathartics in any type of appendicitis certainly accounts for a large share of the five per cent mortality which that disease carries.

In our own immediate locality the mortality of appendicitis compares favorably with that of the rest of the United States. Since December 1, 1927, there has been four thousand two hundred seventy-five surgical cases which were operated on, in either of the two Shawnee Hospitals. The general mortality of all operations over that period was only 2.7 per cent which, I believe, is very good indeed. Of the four thousand two hundred seventy-five surgical cases, one thousand one hundred eighty-eight were operated on for appendicitis. The mortality was 4.1 percent although still far too high, is below the general United States average. Analyzing still further the mortality of the one thousand one hundred eighty-eight appendicitis cases, one finds that one hundred and eighty-three of these cases were classified as ruptured appendix, on admis-

sion to the hospitals, and that the mortality of the one hundred eighty-three cases was twenty-six per cent, while the mortality of the one thousand five unruptured appendix cases was less than .3 per cent.

Probably a still further analysis of the one hundred eighty-three ruptured cases would show that a certain percentage had localized abscesses, and a certain percentage had a generalized peritonitis, and that the higher mortality was to a certain extent confined to those patients having a generalized peritonitis.

It is obvious that the ideal way to reduce the number of ruptured appendix cases and thereby reduce the mortality of appendicitis in general is to educate the people as to the dangers of the administration of cathartics, and delay in calling the doctor when an individual has pain in the abdomen. However, such education is slow and hampered by the ethics and lethargy of the profession, and the cults and quacks, omni-present who capitalize every time the medical profession breaks into print, or comes before the public mind. In spite of this, education of the public must still be the goal. But in the mean time, perhaps the mortality may still be lowered by a little more conservative treatment of those patients who come to us with the symptoms and physical findings of a generalized peritonitis.

I believe that the consensus of opinion of the surgical teachers in the United States is that to operate on a patient with the history and physical findings of a generalized peritonitis of many hours standing, to establish drainage or what, only serves to break down that patient's already decreased resistance, and to hasten his exitus, and that it is far better to treat such a patient conservatively by giving him enough morphine to keep the bowels and body absolutely quiet. To administer large amounts of salt solution and glucose intravenously and sub-cutaneously with nothing by mouth, and to wait several days or a week to allow the peritoneum to wall off the infection into a

\*Read before Pottawatomie County Medical Society, November 21, 1931.



localized abscess, which may then be drained with comparative safety. Those patients who die under conservative treatment would most surely die under a more radical treatment.

If one were sure that the offending ruptured appendix was lying free just under the parietal peritoneum, and that its removal through a small incision could be done without disturbing the rest of the peritoneal cavity, he might be justified in such a procedure. More often the ruptured appendix due to the distension and infection of the bowel, is located with difficulty, and its removal is attended with considerable trauma, and further soiling of the peritoneal cavity, which causes an overwhelming peritonitis and death.

Furthermore, many investigators have shown in recent years, experimentally and clinically, that it is impossible to drain the peritoneal cavity, and that in generalized peritonitis, any type of drain becomes walled off within twelve to twenty-four hours, and only drains a pocket of the peritoneal cavity, immediately surrounding the drain. Not only does the drain fail to drain, but Dr. Buchbinder of Chicago, has shown experimentally that the introduction of drains in themselves spread the peritonitis and hastens death.

Dr. Buchbinder established a lethal peritonitis in a series of over thirty-one dogs, by resecting about fourteen to sixteen inches of the distal ilium, leaving it attached to its mesentery and allowing the open loop of gut to fall free in the peritoneal cavity. An end to end anastomosis was done on the intact ends and the abdomen was closed without drainage. 90.3 per cent of these dogs would die of generalized peritonitis, in five or six days. He then took another series of dogs and found that if another incision was made at the end of twenty-four hours and the open loop was gently removed after ligation of its mesentery and the abdomen closed tight without drainage, that the mortality was reduced to fifty-two per cent. In a third series of twenty dogs, operated on under identical conditions, and in the same manner, if the open loop was removed at the end of twenty-four hours, and in addition two soft rubber tissue drains were inserted, one into the pelvis and one in the liver region, that one hundred percent of the dogs died within one to fourteen days.

Autopsies were made of all the dogs, and it was interesting to note that in all

cases the drains were walled off by fibrinous exudate and in no case were actually draining the peritoneal cavity. It seemed remarkable that in the dogs with such a virulent peritonitis, that there was no protective fibrinous exudate about the loops of the intestine—that there would still be enough fibrinous exudate formed at the site of the drain to effectively wall it off. Realizing that there is a marked difference in experimental peritonitis and that met with in clinical practice, I sight Dr. Buchbinder's work because his results seem analogous to that seen clinically in the wards of large hospitals.

In conclusion, I feel that I must make myself clear—that I believe that all cases of localized peritonitis with walled off abscess, should be operated on, and can and should be effectively drained. However, in the acute, diffuse or generalized peritonitis, I believe that operation should be deferred until a time when the body's own protective mechanism can wall off and localize the infection into an abscess and then it should be operated on and drained, usually leaving the appendix to be removed at a later date, unless it is unusually free and accessible to removal.

Such a procedure, I believe will lessen the mortality of generalized peritonitis, from ruptured appendix and thereby lessen to some degree the still too high mortality of that disease.

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#### ISOLATION OF BRUCELLA ABORTUS FROM HUMAN FETUS

Charles M. Carpenter and Ruth Boak, Ithaca, N. Y. (Journal A. M. A., April 11, 1931), report the first instance in which *Brucella abortus* was isolated from a human fetus. They were unable to determine whether the placenta as well as the fetus was infected or to study it histologically; but, basing their opinion on the mode of infection in other species of animals, such must have been the case. They believe that in this case the abortion was the result of an infection with *B. abortus* and that physicians investigating the pathology of the genitourinary system should consider more frequently *B. abortus* as a possible etiologic agent of disease in these tissues.

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#### STUDIES OF CALCIUM AND PHOSPHORUS METABOLISM

Walter Bauer, William T. Salter and Joseph C. Aub, Boston (Journal A. M. A., April 11, 1931), have found that the very slow, intravenous administration of 20 cc. of a sterile solution of 5 per cent calcium chloride promptly relieves the severe pain of colic caused by lead, or ureteral or biliary stone. The relief afforded by such therapy is more rapid and more constant than that by other forms of treatment they have employed.

# APPENDICITIS AND THE PUBLIC

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When we read that 18,000 to 20,000 people in the United States die every year from a curable disease like appendicitis, is it not time to invoice our stock and endeavor to right our wrongs?

For many years the profession has been perfectly familiar with the disease and they are so well agreed on the diagnosis and treatment that one seldom hears of a doctor who offers to treat appendicitis without surgery. Every doctor and every surgeon records the uniform good results obtained in early clean cases. And around this statement "early clean cases," hinges the crux of the situation.

The deaths recorded are not due in reality to primary appendicitis, but to peritonitis or some of the complicating conditions arising from the infection following rupture of the appendix. It is not primary appendicitis then that kills 18,000 to 20,000 in this United States annually; but it is the ruptured appendices. Primary appendicitis seldom kills anyone, but the ruptured appendix accounts for this unnecessary high mortality.

Why then do so many appendices rupture? One of our internes recently remarked that it might be due to the hot weather, another countered that it was due to the castor oil they took before coming to the hospital. But, it is not due to either cause. *The whole trouble comes from the amount of time elapsed between the onset of the initial symptoms and the time of operation.* When this evil is corrected we will cease having deaths from appendicitis.

Why then should so much time elapse to permit so many appendices to rupture?

As I go over the records of the cases that come to us, I find that at times the delay may be charged to the physician. The fulminating attacks often have an obscure beginning, and it is so difficult to differentiate early appendicitis from many other conditions that we may call for time to be positive of the diagnosis.

It seems to me that one of the common

facts to lead the physicians astray is that the pain frequently begins in the "pit of the stomach," around the navel, or in the left side, so that we must remember that any abdominal pain, regardless of the location, may be, and often is, due to appendicitis even though the pain or tenderness may never definitely localize in the lower right side.

Another fact to remember is that the acute, diffuse pain usually means a fulminating attack of appendicitis wherein the time element counts for so much. So, may I remind you, where there is acute, diffuse abdominal pain, if you are unable to make a positive diagnosis on the first visit, go back to see your patient every two hours until you can positively eliminate appendicitis. None of us want to be guilty of unnecessary surgery or ruthlessly removing an appendix under mistaken diagnosis, and I do not want to be misunderstood as advocating such a course, but this much is true, after making a careful study, if we are still unable to be positive in the diagnosis, we may even be justified at times in doing an exploration rather than making the fatal error of waiting too long and permitting the appendix to rupture. This is especially true where we can be reasonably certain of finding the trouble at operation in case it is not the appendix. A course of this nature is certainly much safer for the patient than too much delay.

Now, so much for the doctor. He is not the only one responsible for delay. It has been my experience that it is only in the very exceptional case that he is responsible in the least. On the contrary, we usually find him exerting every means possible to get the patient to early surgery.

Wherein, then, do we find the cause for so much delay and how may it be corrected?

The greatest amount of trouble comes from the lack of sufficient understanding by the public. They are not properly aware of the nature and treacherousness



of the disease. When a man takes sick with "indigestion," "cramp colic," or the "stomach ache," he can see no immediate rush for summoning a physician. He certainly has no cause to think that an emergency exists. He is most likely to wait until the pain becomes intolerable before thinking of calling his family physician. And then he only calls him to obtain relief from pain, not because of any danger, and even when his physician tells him he has appendicitis he still feels no alarm, except that he might be compelled to have an operation sometime. He has not been properly educated to realize the imminent danger at hand, and as a result of this, when the physician advises him of the need for early and prompt surgery, instead of cooperating with this advice he frequently questions the judgment of the physician and at times, I might say, he may even question his veracity. However, this is rare and it is remarkable to see the implicit confidence usually manifested in the physician, and in turn the perfect honesty and sincerity practiced by the physician. Yet where the diagnosis is clear and there is no doubt in the mind of the physician, and no doubt in the mind of the patient, there are still many things to prevent and delay early surgery. For instance, no one, or practically no one, would think of going to a hospital for major surgery without first advising, or at least communicating with their friends or relatives. Many times these friends and relatives are in other states or another part of the state or in some locality difficult to communicate with. I have many patients delay surgery a day or two until some relative could reach home to be present at the operation.

The cost of hospitalization and surgeon's fees are matters for vital concern, especially during this financial stringency.

Hospitals cannot operate unless they are paid, and the average individual makes financial preparations for everything but sickness.

The most common cause, however, which serves to delay surgery is the number of people in a community who recover from attacks. Why all this rush to be operated when we can look about us and see many of our acquaintances who have had one or more attacks of appendicitis, who apparently have made perfect recoveries? Of course, all doctors and practically the entire public realize that even

though they recover from an attack it will continue to recur until it forces one to surgery sooner or later. But, it would be so much more convenient at a later time. This is the line of reasoning that goes thru a patient's mind, as he requests his physician to wait another day to see how he gets along.

If we could truthfully tell our patients that the appendix was sure to rupture before another day, there would be no ruptured appendices. But there is absolutely no way for us to tell positively just how soon it will rupture, nor how long it will go before it ruptures, nor which attack they will recover from without rupture, nor in which attack it will rupture and cause death. The only thing we can say with certainty is, that most cases of appendicitis continue to recur until sooner or later they rupture. And that herein lies the cause of the high mortality. And, not only is the high mortality to be considered, but many other things enter into the cause for immediate surgery. First comes the high morbidity; as the percentage of satisfactory cures in the cases that do recover from ruptured appendices is not nearly so great as it is in the clean case. Likewise, the amount of suffering, the duration of time away from one's work, the extra cost of hospitalization for special nursing, and so forth, are all matters that the public have given very little consideration; though they affect them vitally, they are inadequately informed to weigh them properly when the question of immediate surgery is advanced.

How then, can we as physicians lower the mortality rate in appendicitis?

There is only one way, and that is by carefully setting to work in educating the public that stomach ache, cramp colic and indigestion may be and often is appendicitis and should be investigated at once. That at least the patient should be seen every two hours until appendicitis can be definitely excluded in every case of severe abdominal pain. That there is no way in the world of knowing which attack will and which attack will not rupture. And that there is no means of determining how long any given attack will go without rupturing. That the safest and best way to reduce the risk to life, the amount of suffering and the duration of hospitalization, the expense of care and the time

away from business is through *prompt and early surgery*.

We have been making special efforts in education relative to the early symptoms and treatment of cancer. We contribute largely to an educational program in child health and protection. We have literally gone about seeking opportunity to correct and educate crippled children. We have done great work in educating the people relative to the prevention and cure of tuberculosis, and I dare say we have a more specific and satisfactory remedy for appendicitis than most of the common diseases, yet we have 18,000 to 20,000 deaths annually because the people are not sufficiently educated to accept it in time to effect a cure.

If we have gathered but one idea, and that is to avail ourselves of every means of educating our clientele in the early symptoms of appendicitis, and teaching them that a simple stomach ache may be appendicitis and more dangerous and just as much of an emergency as a broken leg, we have gone a long way toward correcting this uncalled for death rate.

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#### STRICTURE OF RECTUM: CONSIDERATION OF SOME UNUSUAL CAUSES

Vernon C. David and C. A. Lauer, Chicago (Journal A. M. A., Jan. 2, 1932), state that lesions primarily involving the bowel wall are responsible for the great majority of strictures of the rectum, and scar tissue following operative trauma or inflammation heads the list. Post-operative stricture of the rectum most frequently follows operations for hemorrhoids. The removal of too great an amount of anal skin is the most important factor. Narrowing of the anal outlet following a Whitehead operation for hemorrhoids has been observed when the line of suture between the mucosa and skin has separated because of tension on the suture line or because of infection. Operations for fistula in ano may result in narrowing of the rectum, especially when large soft part defects are made and the entire sphincter muscle is divided. The point of the stricture is at the upper limit of the scar tissue in the bowel wall. Several strictures of the rectum have followed sloughing of the mucosa succeeded by contraction of the scar after the use of diathermy or injection treatment of hemorrhoids. Scar tissue resulting from infection is a very common cause of rectal stricture. Chronic granulomas of the rectum (usually called syphilis of the rectum) are seen in large numbers, especially among Negro women in charity hospitals. Gonorrhea of the rectum may result in stricture from the fibrosis developed in the healing of the ulceration caused by the disease. Organic narrowing of the anal opening, due to fibrosis of the external sphincter muscle resulting from a long standing chronic fissure of the rectum, has been seen.

Three instances of stricture of the ampulla of the rectum have been observed, resulting from contraction of scar tissue from healed ulcers of amebic dysentery. Long standing ulcerative colitis and proctitis may result in a marked narrowing of the entire rectum. Three cases of hyperplastic tuberculosis of the rectum have been observed. Chronic diverticulitis of the rectum resulted in marked tubular constriction of the rectum in a patient of Dr. D. B. Phemister's. One instance of typical leukoplakia of the rectal mucosa with marked narrowing of the rectum has been observed in a young man over a period of three years. Carcinoma of the rectum, of course, accounts for many strictures of the rectum. Carcinoma in the region of the rectosigmoid, often being scirrhus and occurring in a normally narrowed portion of the bowel, causes stricture and obstruction early. Carcinoma of the ampulla, however, usually being medullary in type and ulcerating early, takes about a year to encircle the bowel completely. Occurring in a normally wide portion of the rectum, obstruction takes place late. Unusual types of carcinoma of the rectal ampulla may cause constriction of the bowel very early. Four cases of extensive colloid carcinoma of the rectum in young persons (aged 16, 22, 24 and 26) were seen, in which the ampullar portion of the bowel was converted into a long tubular stricture with very little ulceration. Epidermoid carcinoma of the anus naturally causes early narrowing of the anal orifice. A papilloma of the rectum which reached the size of a large adult fist caused marked narrowing of the bowel in the hollow of the sacrum in a woman, aged 70. Of great interest to the authors, because of their unusual clinical manifestations, are the instances of narrowing of the rectum from a lesion primarily developing outside of the bowel. One of the most interesting causes of almost complete occlusion of the rectum is the occasional case of carcinoma of the prostate. Another type of tumor pushing into the rectum from the hollow of the sacrum is a chordoma or a sarcoma of the anterior border of the sacrum. Chronic inflammation outside of the rectum may by encroachment on the rectal wall cause marked narrowing of the bowel. Still another type of pressure from without causing a stenosis of the bowel is due to Hodgkin's disease. The authors present briefly the history of a patient having this condition.

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#### MASSIVE UNATTACHED RETROPERITONEAL TUMORS: AN EXPLANATION OF UNATTACHED RETROPERITONEAL TUMORS BASED ON REMNANTS OF THE EMBRYONIC UROGENITAL APPARATUS

G. H. Hansmann and J. W. Budd, Iowa City (Journal A. M. A., Jan. 2, 1932), report seventeen retroperitoneal tumors which were not attached to adult urogenital organs. All the tumors collected from the literature, integrated with the material described by the authors showed that most tumors which occur in adult urogenital organs may occur free along the course of development of the urogenital apparatus. The concept that they arise from remnants of the urogenital apparatus is the most logical explanation of their histogenesis.



# CHRONIC PANCREATITIS\*

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Ezekial the prophet called bread the staff of life, but Ezekial probably never knew that such an essential organ as the sweet bread existed, or he would have given it a position of equal importance. The pancreas is like the liver, one of the great accessory organs of digestion, and like the liver, indispensable. It dominates the true chemistry of digestion, which takes place in the small bowel.

Herophilus the surgeon and anatomist is probably the first one to have found and described the pancreas, hidden away back in the inner recesses of the upper abdomen, crossing transversely the spinal column at the first lumbar vertebrae, and because of its importance, it was made safe and secure against any possible trauma, yet thus surrounded by the liver, the stomach, intestines and other organs, whose duty it is to serve in the great function of digestion and metabolism. This anatomic situation, with such a number of important organs surrounding it, has added all the more to the obscurity in its physiological functions, since these functions could not be isolated from the others, the external secretions flowing into the duodenum in conjunction with a duct from the liver, and there intermingling with the secretions of the stomach and intestines.

De Graff first, and later Claude Barnard, 1856, called attention to its supreme importance from a physiological standpoint, but the truth of Bernard's contention was not appreciated for a long time, and his view was opposed for many years.

Even with the later investigations of Opie Banting and his associates, Pavlov, Pratt, Lamson, and Marks, the innermost secrets have not been altogether revealed. Hence the clinical diagnosis of disease of the pancreas has always been fraught with great difficulty, and a large portion of pancreatic lesions remain unrecognized

clinically, and are first recognized at laparotomy, or at postmortem examinations, this, despite the fact that it is diseased far more frequently than is generally supposed. Many tests to measure the function of the pancreas have been described, but none of them have withstood the test of time, as has been the case with the tests of the liver and kidney. Even the reliability of palpation or even inspection of this small inaccessible organ during laparotomy may be questioned seriously<sup>1</sup>. Deaver and Mayo say the diagnosis of chronic pancreatitis is not often made before operation. The clinical history presents indications, but no absolutely reliable signs, while laboratory tests are of little significance compared with the findings of the operating table. Deaver says "the normal pancreas is compact shape without, and induration characteristic enough to be preceptible to the examining finger. Its appearance is pinkish in color with smooth, more or less glistening surface. The circumscribed or diffuse chronically inflamed gland presents a dull hue, often with points of opacity, some irregularity of the surface, and areas of induration, particularly when the gland is adherent to the overlying peritoneum. The diseased gland is less movable than the normal gland, although this should not be taken to mean that the normal gland is very freely movable." Chronic intestinal pancreatitis is a progressive increase in connective tissue, while the remaining cells show minor changes, but many acini, and their remaining cells undergo atrophy and disappear.

Warren says that interacinor fibrosis is a cause of atrophy of the pancreas. Probably far more frequently the fibrosis is a result of atrophy of the parenchymatous tissue from one cause or another, with resultant condensation of the stroma than an active factor in the production of the pancreatic damage<sup>2</sup>. "The pancreatic tissue is *fairly insusceptible* so far as actual necrosis is concerned to injury from toxic causes as compared with such tis-

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sues, as liver or kidney, and so regenerative changes are rarely seen. This probably accounts for the rarity of pancreatic troubles after infections, Interstitial pancreatitis occurs too frequently, and in too wide a range of disease processes, to be considered a characteristic lesion in diabetes." The analogy to the cirrhotic process in the liver is rather striking, and particularly the great incidence of its damage in connection with gall stones and hepatic disease. The acinar tissue shows no constant changes. Jones, Castle and Mulholland however found that in a series of 68 diabetics pancreatic enzyme activity was diminished in at least half the cases. This marked alteration in the external secretory activity suggests that there may be anatomical changes in the acinar tissue.

Chronic intestinal pancreatitis is a progressive increase in connective tissue, while the remaining cells show minor changes, but many acini and their cells undergo atrophy and disappear. Its modesty is also shown by the fact it receives the insults of bile, being forced in a retrograde manner into the ducts of Wirsung and Santorini, which sets up an infection within, but this theory has been thrown into doubt by Mann and Giordona. Deaver expresses its genesis due to a lymphangitis from a focus of infection, usually in the gall bladder, or perhaps in the liver or the duodenum, and successively involves the periductal and peripancreatic lymph nodes, the nodes in the gastrohepatic omentum, and finally the lymphatic vessels in the interlobar and interlobular spaces of the pancreas itself. Experimental injection demonstrates that the lymphatics of the liver, the gall bladder, and its ducts, communicate with those about the head of the pancreas, and the first portion of the duodenum. So, in the early stages and mild degrees of involvement of the lymphatics of the pancreas may produce but little disturbance, and disappear upon subsidence of the primary infecting focus. It is also true that any long continued lymph stasis and infiltration with damage of the tissue elements, must lead to deterioration of the parenchyma and the deposit of fibrous tissue.

The blood stream route of infection does not seem to have many adherents, since its rarity in diseases which are characterized by marked bacteremia, yet this is a matter of relativity, and is confined to the acute cases where small discrete areas of focal necrosis and hemorrhage are

found. It is quite true that the hormonal function of the islet portion is temporarily crippled by any infectious process, but the subsidence of the infection generally restores the insulin to its preinfective state, a statement which Joslin emphatically upholds. In chronic disease however, we can observe the influence of the intimate anatomic and physiologic relationship between the liver and gall bladder and duodenum, and Deaver says, "that the disease of one or the other of these viscera is likely to affect other members of the associated viscera, a fact which is amply demonstrated by clinical experience."

These swellings and enlargements of the pancreas as noted by the surgeon, certainly differ from those states in which an overgrowth of the interlobular or interacinar fibrosis tissue has taken place. There can be no rapid or material retrogression of the process which has progressed to a fibrous sclerosis. On the other hand, it is characteristic of many of the swellings of the pancreas, as seen at operation, to subside more or less rapidly and completely. This has been determined by secondary operations on patients who showed pancreatic swellings at the first operation, but none when the abdomen has been reopened. Clearly the enlargement must have been due to engorgement, and edema or absorbable cellular exudates.

Deaver says in the cases observed during the past eighteen months, the head was affected alone in 42 cases, and in only nine was the tail of the organ any alteration in size, shape or consistency. In the pancreas the late lesions observed pathologically show sclerosis as marked in the tail as in the body and head.

The fact that in the case of the diabetic who has lived a long time with a rather high tolerance, may gradually begin to lose weight, which is probably more pronounced in pancreatic disease than disturbances in any other organ of the upper abdomen. They suffer with soft fatty stools, persistent nausea, and a progressive downward course is the history thereafter. This picture can best be explained by the gradual spreading of trouble from the islands of Langerhans, over to the acinar and lobular glands, and the glands of external secretion have succumbed to the same devastating process which shows itself on the digestive tract. There is ordinarily some little pain and tenderness in these cases, and that pain is referred



to the back, mostly to the left side, and in my cases, that discomfort is most noticeable at night, or in a recumbent position. The gradual or rapid loss of weight and strength, depending on the rapidity of progress, is a marked clinical observation. I have noticed it date its sudden onset from some acute infection, like flu, which possibly starts a potential trouble into an active one.

The sympathetic sign, the ocular sign or Loewis adrenalin mydriasis test, *i. e.*, if adrenalin is instilled into the eye, the pupil does not ordinarily dilate, but if the pancreas is inadequate, the pupil dilates after one to two drops, of 1-1000 solution is instilled into the eye. This test is supposed to be based upon the antagonism between the adrenal glands and the pancreas, the phenomenon may be observed if there is hyperthyroidism.

The loss of weight and strength is due to the inability to digest the fat and protein taken in as food, but which frequently causes a constipation or diarrhoea of large, soft, light colored fatty, foamy stools, which float on the water. (The gastrogenous diarrhoea has liquid stools). A large amount of neutral fat and free fatty acids appear in the form of droplets and flakes, while the fatty acids appear as large pointed colorless needles, due to the lack of steapsin ferment. The finding of a large amount of fat globules in the stools is always suggestive of pancreatic disease, but in obstructive jaundice, there is also an increase in fats, and the fats are usually in the form of fatty acids.,

The inability of the trypsin to digest the muscle fibres and particularly their neuclei after the sarolemma has been digested in the stomach, is evidenced by the use of the microscopic examination of the stools, and the cadaveric odor with much flatulence. Osler claims that constipation and diarrhoea may alternate.

The gastrogenous diarrhoea or the absence of free Hcl in the old diabetic, *i. e.*, one that has lasted as much as six and five-tenths years<sup>5</sup>, may be a factor in differentiation. The diarrhoea of gastric origin however is usually sudden in onset and may occur once or several times in the course of the day. In some instances the movements are frequent and liquid in character, and they may appear almost immediately after food is introduced into the stomach. In some cases the move-

ments do not occur until one-half hour or more after the ingestion of a meal. In these cases the movement is soft and almost normal, and then is followed by liquid movements, while in other instances the evacuations are liquid from the start, abundant, yellowish, foamy, and even fetid in character. This type of movement is most often observed in the anacid or subacid cases, and is usually relieved by the administration of acids.

Cambridge describes four types of chronic pancreatitis:

1. Dyspeptic in which the disease is due to a marked condition in which the bowels and the symptoms are referred mainly to the digestive organs.

2. Cholelithic associated with the pressure of gall stones in the common duct, usually there is chronic jaundice and the symptoms are hepatic.

3. Miscellaneous group in which pancreatitis is secondary to malignant disease, (or a pancreatic cyst).

4. The diabetic group with glycosuria into which the preceding groups may merge in time.

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#### CASE REPORTS

Mr. A. W. Age 61. 5' 10". Has weighed 162 pounds for the past four years, formerly 210 for the previous twenty-five years.

Nineteen years ago he first noticed sugar in the urine. Had glucose seven years ago, and went on a starch free diet, in a desultory way. On March 30, 1929, he noticed he could not close his eye (right), smiled on one side of his face only, food collected on that side. This was preceded by a pain in the right mastoid region. His B. P was 170-110; blood sugar 444; libido absent for two years. Under dietary management, and being given seven units of insulin morning and evening, he maintained sugar free, until February, 1930, when he had an acute influenzal attack, after which began numerous but not watery stools. These stools contained much fat and muscle fibers, with neuclei present. Examination of stools for para-

sites, ova and blood were negative. His stools were more frequent at night, disturbing his slumber. He had as many as eight stools a day. These stools always floated on water, cadaverous odor, and foamy, attended with much flatulence.

X-ray of the gastro-intestinal tract was negative except for some evidence of irritability at the terminal ileum. Proctoscopic examination showed that the mucous membrane of the lower rectum bled more easily than normal, but was otherwise negative. Analysis of the gastric contents showed total acidity to be 70, and free Hcl 58. Hemoglobin was 73%; erythrocytes numbered 4,670,000; leucocytes 8400. The differential count was normal, Blood Wassermann was negative. The basal metabolic rate was plus 6. The dye test of liver function was normal.

He had pain in the upper abdomen, shooting into the back on the left side, more noticeable at night.

Under the use of a bland diet, Panteric tablets, or Haladine and bile salts, his stools became less frequent, and the odor diminished materially. He continued to lose flesh. Under the use of a greater amount of insulin, and a liberal carbohydrate diet, he gained a little flesh, but his extreme weakness and depression remained. Jaundice complicated the picture in August, and he was operated on for cancer of the pancreas, in late September.

My impression of this case is that of an old involvement of the islands of Langerhans, with a gradual sclerosis of the racemose glands, which may have taken on a malignant growth, thus ending the picture.

The following history was taken on the 6th of November, 1924.

Mr. Fred E., 24 years old. Married five years, and has two children. Maximum weight 165; present 120. Worked hard on a farm until three years ago, when he came to town and began working in an office. Drank many coca colas. Father a tall slender man, weighing 165 pounds. Mother 5' 8" weight 200. No diabetic history in family.

Noticed no ill effect until two weeks ago, when he noticed marked weakness and polyuria. On consulting a physician, (Dr. Cooley) the first time he had ever consulted one, he was told he had diabetes, and was later sent for treatment.

We found him drowsy, his arteries were markedly palpable. Weight 134½ pounds. Glucose heavy, 5.1%. Acetone heavy. Blood sugar 453 mgm per 100 cc. On a diet of P. 50; COH 50; fats 125; and insulin 15 units three times a day, his blood sugar reduced to 141 mgm and urinary glucose a trace. Acetone negative, and he went home on the 19th of November, 1924.

He continued his insulin and careless adherence to a weighed diet until I saw him again on the 24th of April, 1930. He was then complaining of frequent bowel movement, for the past year, beginning three nightly and three daily stools. These stools were not liquid, but soft; foamy, and floated on the water. At present he had eight nightly and five or six daily stools, sleep very much disturbed by frequent stools. Never noticed any blood or mucous, but always with a cadaveric odor and much borborygmi. Laboratory reported fatty acids and neutral fat with undigested meat fibers showing nuclei.

Began a very slight unproductive cough two months ago. Dullness and bronchial breathing, with a few crackling rales in both lobes, below apex. Temperature practically normal. X-ray reports an area of caseation about three inches in diameter, with probably small cavities in lower portion of both upper right and left lobes.

On 60 P; 150 fats and 100 COH, his blood sugar at first 444 gms and urine sometimes as high as 4.48, but never any acetones, he finally steadied down to sugar free on 40 units of insulin a day, in four doses. His stools became less frequent, only three times a day, especially at night, and his sleep was quite normal. Stomach analysis showed HCL absent. Total acid 68, and much mucous.

Under holadine and bile salts, his bowels lost their frequency, and some of their volume, but his progress was steadily downward, and he died from inanition on July 2, 1930.

Mr. L. G. Shoe merchant. 50 year old. Maximum weight 220 at 30 years of age. Present 126. Lost weight gradually from 33 years old to present time. In May, 1923, he weighed 190. Complete exodontia in 1924 for pyorrhoea. In May 1929, he lost 55 pounds in 21 days, following an acute nonradiating substernal pain, which took 3 hypodermics to relieve.

Family history negative. Patient uses tobacco and cigars, no alcohol. Gall blad-



der trouble in 1919. Headaches frequently until 35 years old. Few or none since. Slightly constipated. He worked unusually hard past summer, and then took a motor trip back East, and has not been himself since then. Shallow yellow complexion all his life. Color deepens at times, and then clears up. No icteric tint to sclera or skin. Feels better after taking "liver medicine."

*Chief Complaint:* Continuous bilious spell with coated tongue in past two months, with loss of weight and increasing weakness, has felt weak. Unproductive cough for eight days. Tongue heavily coated. Halitosis. Talks thick, and hard to understand. Keeps mouth open. Nocturia one or two times.

Heart palpable at left axillary line in 3, 4 and 5th interspaces. Palpable thrill in PMI region. Heart palpated in 3, 4 and 5 interspaces to right of sternum, 4 cm to right of mid-sternal line. No swelling of feet at this time, but swelling of feet during attack in 1929.

Spleen not palpable. Liver normal size. Radials not palpably sclerosed. Lips have slight bluish tint. Quick, snappy first sound to slight systolic rumble. Pulse reclining 82; standing 98.

*Fluoroscopic:* Some generalized enlargement of heart. Apex slightly to left.

*Roentgen examination:* Well filled gall bladder after intravenous administration of dye with a stone about one-half inch in diameter. Film of chest shows considerable fibrosis extending from right and left hilus toward the base. Marked generalized enlargement of the heart in all diameters.

*Urine:* Dark straw color, cloudy. Alkaline. Sp. G. 1030, no albumin, trace of glucose. Crystals very heavy amorphous.

*Blood Count:* RBC 4,830,000; WBC 6,550; Hgb. 80; Index .8 plus; P. 65; L. 35; platelets few; no parasites, size, shape and color normal.

Muscular tremble of legs while standing. Reflexes not increased. Pupils react to L. & A., but felt better than right. Noticed failing in sight the past week. Has been drowsy and sleepy for last three weeks, but sleepless before that time. Does not dream. Bowels very frequent, not liquid, but bulky, with foul odor, and attended with much gas. Stools more frequent at night than in day time: This frequency was relieved after giving him

panteric tables, on a diet which had not been changed. Stools which had been floating on water, later sank, after administration of these tablets. Physical condition improved after the daily use of insulin. It gave him a good appetite, and his tongue began to clear up, halitosis less marked, and in thirty days he was able to be out on the streets.

#### FINAL DIAGNOSIS

1. Gall stones. (Cholelithiasis).
2. Cardiac dilatation.
3. Bronchitis.
4. Chronic Pancreatitis.

Mrs. J. B., Oklahoma City. Age 19. Married a year and a half. Maximum weight 118; present weight 96.

Mother died at 45 of cancer; father living and well; three sisters and two brothers, all living and well.

Patient entered womanhood at 13. Irregular. Before married unwell eight to nine days. Twice curretted because of metrorrhagia which continued from one month to another.

*Chief Complaint:* Patient noticed she was nauseated for three weeks, prior to August 20. Lost her appetite. Began noticing a painless jaundice. This continued to deepen in color, accompanied by white stools, and dark colored urine. Intense itching began a month after onset of jaundice, which was so severe as to keep her awake at night, and was very troublesome in the day time. She had an absence of appetite, which was marked throughout the whole period. Repeated Wassermanns were negative.

*Blood Count:* RBC 2,590,000; WBC 6,200; P. 63; L. 37; Hgb. 60; normal size, but lacking in color.

*Urine:* Clear, amber, acid, Sp. G. 1008, bile, two plus albumin.

*Stool.* White, contained fatty matter, rather foamy, no liquid, and floated on water.

Several attempts at Lyon's gall bladder drainage was ineffective, and on the 21st of October, 1930, she was operated on by Dr. Horace Reed, and a large congested hobulated head of the pancreas was found. There was no stone in the gall duct. It was normal in size and non-adherent. A drainage tube which was left in the opening caused a small amount of bile to flow at first, and it increased in amount, with

lessening of the jaundice. Her appetite soon returned, itching disappeared, stools became dark, and urine light in color.

I again saw her on the first of December, and she had gained ten pounds, jaundice entirely gone. She had a ravenous appetite, and was feeling fine. Her menses were normally reestablished after the operation, until she became pregnant.

#### DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF SMALL AND LARGE INTESTINE

Lawrason Brown, Saranac Lake, N. Y., and Homer L. Sampson, Trudeau, N. Y. (Journal A. M. A., Jan. 2, 1932), enumerate the suggestive symptoms of beginning intestinal tuberculosis thus: any digestive disturbances, marked constipation, failure of the pulmonary condition to improve, an irregular temperature with subnormal fluctuations, possibly decrease of pulmonary symptoms while the patient is no better, alternating diarrhea and constipation, and marked nervousness. As symptoms are so often absent and the abdominal and proctoscopic examinations are so often negative, one must turn to the study of the barium meal and enema by roentgen rays to exclude intestinal tuberculosis. The roentgen method of diagnosis reveals the presence only of intestinal ulceration, but, when associated with pulmonary tuberculosis, especially if the pulmonary disease is at all advanced, it is safe to make a diagnosis of intestinal tuberculosis. Heliotherapy, natural or artificial, relieves the symptoms in a large proportion of early cases. In a certain number apparent recovery follows its use. When desired results are not obtained by this method, roentgen or other forms of treatment should be carefully followed. The dietetic treatment, consisting of cod liver oil, 1 ounce (30 cc.), and tomato or orange juice, 4 ounces (120 cc.), ice cold, when taken immediately after meals has apparently cured many cases. Surgical intervention is practiced less frequently now than formerly. The roentgen technic may not reveal the whole extent of the involvement. Patients with advanced pulmonary tuberculosis do not do well under operation and should not be operated on, nor should those with advanced intestinal lesions, except to relieve symptoms. In early localized lesions, excision is the operation of choice, but it may be necessary to short-circuit, which in advanced cases may make the condition and symptoms worse. The establishment of one or two mucous fistulas, from one or both ends of the affected portion of the intestine, may prolong life and help recovery but is most trying to the patient. Medical treatment, when diarrhea is absent, is of little avail. For diarrhea, drop doses of creosote in a capsule with one-fourth grain (0.016 Gm.) of iodoform, may be tried after meals. Phenyl salicylate and Tully powder (pulvis morphinae comp., consisting of morphine sulphate 0.5 Gm., camphor 9.5 Gm., precipitated chalk 10 Gm., and glycyrrhiza 10 Gm.), 2½ grains (0.16 Gm.) each, every four hours, may have to be resorted to in terminal cases.

#### TETANY ACCOMPANIED BY HYPERPYREXIA AND VOMITING IN FIRST DAYS OF LIFE: UNUSUAL SYNDROME

Murray H. Bass and Samuel Karelitz, New York (Journal A. M. A., Nov. 7, 1931), report the cases of three infants who became extremely ill in the first days of life. They vomited frequently from the first day on; their abdomens became markedly distended; the temperature rose to a great height; two of them had marked dysphagia; they evidenced signs of great nerve irritability—Chvostek's sign was extremely marked; their extremities were held in carpopedal spasm; their cries were hoarse; they had repeated convulsions and seemed about to die. They were given calcium intravenously and hypodermically and promptly recovered. The authors are not prepared to state positively what caused these new-born infants to go into this hyperirritable state, but it is of interest to note that all three vomited profusely and in a projectile manner and had high fever and marked abdominal distention. This would allow one to suggest that the tetany may have been gastric in origin, secondary to the vomiting. Unfortunately, chemical studies were not made to substantiate this. The authors do not maintain that these are cases of infantile tetany but they do believe that, in spite of being newly born, the children were suffering from manifest tetany. In favor of this they again cite the following the presence of positive Chvostek's sign; presence of positive carpopedal spasm; presence of hoarse cry and crow; presence of convulsions; presence in two cases of dysphagia, which in one was definitely shown to be due to cardiopspasm; finally, the amazingly prompt cure by the intravenous administration of calcium.

#### AUTOTRANSFUSION

A. Lincoln Brown and Martin Warren Debenham, San Francisco (Journal A. M. A., April 11, 1931), state that the technic of autotransfusion of blood from the pleural cavity is fundamentally simple. A combination of almost any method of thoracic aspiration and simple intravenous infusion of the collected material will suffice. They have directly adopted an apparatus which had previously been reported by one of them as "A Closed Method for the Transfusion of Citrated Blood." As one is dealing with a blood fluid which no longer tends to clot, the citrate is unnecessary, but the apparatus itself furnishes a closed system for obtaining the fluid, preserving it for any desired period, and finally reinfusing it into the patient's venous system at any desired rate, without transferring it to another container. This method suffices for the actual collection, maintenance and infusion of the material obtained from the thorax, but this does not complete the procedure. The authors firmly believe that the withdrawal of blood from the thoracic cavity should always be augmented by observation of and probable maintenance or increase of the intrapleural pressure relationships existing at the moment. This is best accomplished by having a pneumothorax apparatus simultaneously connected with the thoracic cavity. This allows not only for pressure determinations but also for replacement by air or oxygen so that any desired intrapleural pressure may be maintained. The importance of this replacement therapy in the prevention of future hemorrhage, respiratory embarrassment and adhesions is stressed.



# DIGESTIVE DISORDERS DUE TO LESIONS OF THE STOMACH AND DUODENUM

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Any one who has been sufficiently interested in the so-called "digestive disturbances" to delve below the surface would naturally hesitate to attempt to discuss this subject—especially in a short paper, even as a sailor dreads sailing into the Sargosso sea. For as one gets into it he is held by an intangible mass and is blocked by contradictory evidence in every direction.

The subject presupposes a hard and fast dividing line between "symptoms suggesting digestive disturbances, due to conditions arising in the stomach and duodenum," and "those arising from conditions elsewhere in the body."

There are definite pathological states in the stomach and duodenum which are considered primary as; carcinoma, ulcer, inflammations, conditions arising from congenital anomalies, etc.,—but the original source of even these primary conditions is a question for argument, *e. g.*, carcinoma may be metastatic or on the other hand may be brought about by some extrinsic or formative stimulus arising from without the stomach. The ultimate cause of ulcer is still more or less a mooted question. Is it of bacterial origin from a focus of infection or is it purely physiological and if so, is this disturbance of extragastric origin?

The units of the digestive tract are so closely allied that any disturbance in one portion is very likely to react on any other portion. This is particularly true regarding the stomach and is, we are discovering more and more, of the duodenum as well. Then, too, there are certain functional disturbances or perverted physiologic states of these organs which from our present day knowledge must be considered of local origin; and these conditions produce as definite syndromes as do the proven pathologic conditions and they destroy efficiency of the individual just as surely.

In point of observation it has become quite obvious that certain organic conditions may be and often are preceded and probably produced by abnormal physiologic conditions.

However as repeated emphasis of essential points in differentiation and studies in classification are always valuable, even a brief discussion of this question may be of sufficient importance to warrant discussion.

Complaints by patients, referable to the stomach, comprise a large part of every physician's practice. To determine what these symptoms mean is the task.

The question to be answered first—do these symptoms arise from a gastric or a duodenal condition or from some other part of the body and simply radioed to the stomach—and if from the stomach itself what is the type, at least in general, of the trouble. Hence, a wide clinical experience and general knowledge of medicine is a primary essential,

The two most striking symptoms of gastric and duodenal diseases—pain and vomiting—may be just as characteristic of extragastric trouble, as for example: angina pectoris, acute appendicitis, uraemia, pregnancy, tabes dorsalis. In fact vomiting is less a characteristic symptom in stomach lesions than in the majority of the diseases just mentioned, while it is a much more common symptom in duodenal disease. To differentiate then the character of the onset, the time, location, character, duration, and recurrence of the pain must be determined; likewise of the vomiting, and if both are present the relation of the pain to the vomiting, so that an accurate detailed history of the case from its incipency is essential. Pain or discomfort in the region of the stomach is at once the more complicating and important in reference to stomach disease

than in reference to disease of any other organ.

Every disease has its particular arrangement of symptoms, even though the symptoms be the same; *e. g.*, in appendicitis the pain appears first, is sudden in the upper abdomen, without reference to intake of food, followed by nausea and vomiting after which the pain changes its location to the lower right quadrant. In peptic ulcer the pain, except in the rarely acute cases, appears one to three hours after the ingestion of a meal, it is mild at first and disappears when something is taken into the stomach to recur in one to three hours. This pain is burning or boring in character and is not accompanied by vomiting except when induced for relief of pain. On the other hand chronic anhydric gastritis is accompanied by a sense of weight or heaviness in the epigastrium with a "full feeling" immediately after eating and relieved on emptying the stomach. Of the two conditions just referred to we notice a definite relation to the intake of food, but with definite contrary reactions. A study of these two types reveals likewise a diametrically opposite chemical state in the stomach. In the ulcer type of trouble there is found a positive increase in the activating and digestive agent in the gastric juice; *namely* the hydrochloric acid and pepsin—while in the other an absence or very low hydrochloric acid content with a corresponding lowering of the pepsinogen secretion and a definite increase in the organic acids is the rule. Furthermore it is found in studying the symptoms associated with functional derangement of the stomach, a similar result; *i. e.*, in those with an increased digestive secretion the ulcer type of pain, sometimes referred to as chemical distress occurs, while in those cases in which there is an absence of or very low secretion of the more important digestive elements, the distress, with bloating and often nausea, appears promptly after the ingestion of food.

Then for the foundation for a diagnosis or for a temporary basis, all gastric cases may be divided into two general types; the achlorhydric and hyperchlorhydric types, as the symptoms and many of the findings in gastric disease are the result of disturbed sensation of the terminal nerve endings in the gastric mucosa and based largely on the physiological state with or without an associated pathology. This must be considered as a gen-

eral statement as there are a few striking exceptions.

Assuming that we are able to readily determine the digestive disturbances complained of as gastro-duodenal in origin and not merely barometric evidence due to disease elsewhere in the body, we are able to classify roughly the trouble as being one of two types—that due to an irritation from an increased functional activity of the glands of digestive secretion and that in which a deficiency occurs—for probably no where does pathology play as small a part in producing symptoms and physiology play as large a part as in the stomach and duodenum. For example, in peptic ulcer regardless of the location of the lesion, whether at the pylorus or on the gastric or duodenal side of the pylorus, the outstanding early symptom is distress in the epigastrium appearing at a distance from the meals; *i. e.*, at a time when the food has ceased to act as a buffer against the digestive juices—the neutralization of the hydrochloric acid or the frequent administering of small quantities of food, both of which operate to protect the gastric walls, relieves the symptoms long before sufficient time can have elapsed for the correction of the pathology present. Likewise in the class of cases usually designated as gastritis—when of the acid type, the distress appears late, following the intake of food, and is temporarily relieved by alkalies. These cases of so-called preulcer gastritis have all of the characteristic ulcer evidences except the demonstrable defect. Often the defect may later be readily demonstrated in untreated cases—thus the physiological or chemical state of the stomach may act as a direct cause in producing the peptic ulcer. On the other hand, in achlorhydric gastritis and early carcinoma of the stomach the symptoms of distress and the disturbances, as vomiting and flatulence, occur immediately after eating, usually lasting an hour or two—the patient always experiencing comfort with an empty stomach or relieved by the taking of an acid or artificial digestants.

But obviously since the symptoms are so dependent on chemical disturbance the diagnosis thus made can be no more than tentative. To go further into the case than mere grouping, requires an intimate knowledge of the conditions in the stomach made on accurate determination. Then, too, other symptoms develop as the disease progresses, resulting from the insult to the



tissues or by anatomical disturbances presenting evidences peculiar to each disease and often varying in different individuals suffering from the same disease. The evidences can often only be discovered by investigation.

Probably in no class of cases does the routine laboratory, when properly used, offer as much dependable help to the clinician as in gastroenterological work, provided, however, the findings of the laboratory, including the X-ray, are capably interpreted and properly correlated with the symptoms and physical findings. For in spite of its value if a single procedure is depended upon, or if the procedures are not intelligently interpreted, it is likely to prove the most misleading of anything in the whole category of diagnostic procedures.

In the ulcer type of trouble an hyperchlorhydria, either absolute or relative, occurs producing the symptoms of "chemical distress"—the condition may progress no further and remain simply an hyperchlorhydria with symptoms, to respond readily to proper management, or it may proceed further reaching the stage in which is found a marked irritability of the stomach or duodenum or both. If limited to the stomach there is very little in the way of additional symptoms except general soreness over the epigastrium, constipation, eructation of sour material after eating, and a tendency on the part of the patient to note ill effects from the ingestion of acid bearing foods, especially raw fruits. If the duodenum is affected—the so-called duodenitis—vomiting is a common symptom with definite soreness under the right costal margin. In some of these cases periodic attacks of sharp pain occur, located in the right epigastrium and often radiating to the back so that this condition sometimes simulates a gall-bladder attack. Gastric lavage or even a teaspoonful of sodium bicarbonate gives relief so that differentiation from gall-bladder is soon made.

In the so-called acid gastritis or duodenitis the X-ray is of considerable help, particularly the fluoroscope, by the use of which may be seen the rapid peristalsis, heavy rugae, a very irregular or wavy outline of the stomach. The duodenum shows a much more sharply defined outline than in normal cases with rather marked duodenal spasm and tendency to take on a stringy appearance.

In the true ulcer case the epigastric distress early becomes continuous, interrupted only by taking small quantities of food or alkalies, the patient becomes nervous, a fear of food often appears, constipation becomes marked, sleep is disturbed especially during the latter part of the night, brought about by the gastric retention. Early in the course of the disease the patient gains weight but later shows a progressive loss of weight.

The gastric studies show a definite hyperchlorhydria with general hypersecretion and food retention. Fluoroscopic examination reveals deep waves with pylorospasm. A defect indicating the location of the ulcer can usually be seen with a heave spasm on the greater curvature opposite the defect. The duodenal cap rarely fills well whether the defect is located in the stomach or duodenum.

In the achlorhydric group three outstanding conditions are met: anhydric gastritis, carcomp,a. and stenosing peri-duodenitis.

Gastritis in this group is frequently associated with a pronounced ptosis and dilatation of the stomach, the patient complains of weakness, belching, foul breath, loss of appetite, and a sense of discomfort with flatulence immediately after eating. In the cases associated with ptosis a severe anemia is often found. Gastric studies show an absence of hydrochloric acid with a low acidity and in the early period, a rapid emptying of the stomach. Later and especially if associated with ptosis, retention of food with much evidence of fermentation is found, due to a pronounced atony and weakness of the musculature.

One hesitates to touch upon the question of carcinoma in a sentence, important as it is, as there are no crucial symptoms of carcinoma of the stomach early; *i. e.*, at a time when something curative may be done. The symptoms may simulate those of any of the previous mentioned diseases. However, one characteristic should be mentioned as being of considerable value; *i. e.*, an absence of hydrochloric acid with a high total acidity, and further if the growth, tho small, is located near the pylorus and food is abnormally retained, which is contrary to the rule in all other diseases of like conditions of gastric secretions.

The partial obstructing types of duodenal conditions produce a wide range of

symptoms—probably the most protean in their presentation of all gastro-duodenal troubles, except possibly those of syphilis. This condition of partial stenosis is produced by periduodenal adhesions which may follow a gall-bladder disease. They may arise from an unknown cause or may be congenital and consequently may compress the duodenum, thereby narrowing the lumen at any point from the pylorus to the jejunum, resulting in partial obstruction. Hence, an increased activity of muscles of the duodenum in an endeavor to maintain a normal motor function, with the result that the symptoms produced may simulate disease of the stomach, pylorus, gall-bladder, or pancreas. Consequently the symptoms are of little help in a direct way in recognizing the trouble and it is only by exclusion often that it may be diagnosed. An achlorhydria is the rule if retention in the first portion of the duodenum or in the stomach occurs. The X-ray, particularly the fluoroscope, is of the greatest advantage in an effort to obtain direct evidence. The violent contractions, the reverse peristalsis with dilatation of the portion of the duodenum just proximal to the point of interference, can readily be seen and comprise the crucial diagnostic evidence.

It is interesting to note that duodenal ulcer, as pointed out by Sloan, often accompanies or is produced by adhesions in a particular location; *i. e.*, at the duodeno-jejunal junction. After the release of the obstruction a change in gastric secretions is promptly noted, *i. e.*, while a very low secretion or absence of hydrochloric acid exists before operation, a hyperchlorhydria promptly appears and requires treatment for the characteristic accompanying symptoms.

Thus it is evident that, by bearing in mind that in the majority of cases the symptoms are based on the chemical state of the stomach, it is possible to determine in a general way the type of trouble for the purpose of temporary or emergency treatment. But it seems quite plain too, that the changes in the stomach vary so greatly with different diseases that only by obtaining complete knowledge as to the exact character of the changes can a final diagnosis be made. Further, it should be borne in mind that in two diseases *namely*, carcinoma and syphilis, the symptoms and the motor response, in their relation to the secretions, are against the rule. This fact in itself is of great diagnostic im-

portance. Hence, no final conclusions as to any fixed gastro or duodenal condition is entitled to be made without a complete study of the case and a careful correlation of all of the findings, both clinical and technical having been completed.

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#### EPILEPTIFORM SEIZURES OF JACKSONIAN CHARACTER: ANALYSIS OF ONE HUNDRED AND THIRTY CASES

E. F. Fincher, Jr., and Charles E. Dowman, Atlanta, Ga. (Journal A. M. A., Nov 7, 1931), analyze one hundred and thirty cases presenting localized convulsive attacks either motor or sensory in character. In regard to the underlying etiologic factors, the cases fall into the following groups: (1) brain tumor, 24.6 per cent; (2) trauma occurring after birth, 20 per cent; (3) birth trauma, 14.6 per cent; (4) postinfection, 10.7 per cent; (5) cerebral atrophy of undetermined cause, 5.2 per cent; (6) syphilis, 5.3 per cent; (7) palsies of childhood of undetermined etiology, 3.8 per cent; (8) arteriosclerosis, 3 per cent; (9) miscellaneous causes, 3.8 per cent; (10) undetermined etiology, 8.4 per cent. There were ninety-one males and thirty-nine females in the group. In sixty-nine of the cases exploratory craniotomy was advised, and in sixty-two it was performed. The treatment in the cases in which operation was performed consisted, in general, of the removal of tumors, the excision of cortical cicatrix, and the destruction of the so-called epileptic zone if no gross lesion was demonstrated. The results in the cases in which operation was performed seem to support the opinion that exploratory craniotomy is a justifiable procedure in all cases presenting localized epileptiform seizures in which the possibility of uncovering a removable lesion or destroying a demonstrable epileptic zone exists.

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#### HYPERTENSION: VALUE OF CALCIUM SALTS PLUS DIET IN ITS MANAGEMENT

N. S. Davis, III, Chicago (Journal A. M. A., Oct. 31, 1931), has found that calcium lactate, 8 Gm. in water half an hour before meals, plus a low salt, low maintenance protein diet, with most of the protein from milk, moderate in total amount but adequate in all respects, causes considerable subjective improvement in patients with hypertension but objectively it is of little value. It seems that hypertension, like fever, may be intermittent, remittent, continuous or pernicious. It seems that, like fever, hypertension may be a symptom of several diseases or pathologic conditions for which there may be various causes. It seems that just as physicians formerly sought antipyretics to lower fever without considering the disease of which it was a symptom, they are now seeking depressor substances to lower the blood pressure instead of concentrating on the description of the diseases of which hypertension is a symptom and their differentiation. The author emphasizes two points: 1. No cure for hypertension will be found until physicians are able to recognize the conditions of which it is a symptom. 2. The value of any therapeutic agent in the treatment of hypertension cannot be determined in a few days or weeks but only after months or years of trial.



# THE JOURNAL

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### EDITORIAL

## THE OKLAHOMA INCOME TAX

Oklahoma physicians generally understand the terms of the Federal income tax, but it is doubtful if many of them understand that the last Legislature passed an act very much lowering the original income tax. This may be found in the Session Laws of Oklahoma, 1931, page 236, chapter 66, article 7. However, it is advised, where there is any question in the physician's mind, that he consult some tax attorney or other informed person as to his return.

The law requires that the following

individuals each make, under oath, a return stating specifically the items of their gross income and the deductions and credits allowed under this act.

(1) Each individual having a net income of \$750.00 or over, if single, or if married and not living with husband or wife.

(2) Each individual having a net income for the taxable year, of \$1500.00 or over, if married and living with husband or wife;

(3) Each individual having a gross income for the taxable year, of \$2500.00 or over, regardless of the amount of his net income.

Certain returns from insurance, the value of property acquired by gift or bequest, interest upon the obligations of the United States; salaries, wages and other compensations received from the United States, by officials or employees thereof, etc.; amount received through accident, disability or health insurance or under Workmen's Compensation Acts, dividends received from stock in any corporation, are exempt from the tax. \$750.00 is exempt in the case of a single or individual taxpayer and \$1500.00 in the case of a husband and wife.

This is of extreme importance to every physician, in the State, for some form of return must be made as a penalty of \$10.00 per day may be assessed for failure to make the return.

### "TIT FOR TAT," THE LAW AND MEDICINE

For a long time the writer has thought that occasionally, say once a year, the legal and medical profession should have a "get together" meeting in order to clarify the various angles upon which physicians and lawyers act. Perhaps the most misunderstood of all things, affecting these great professions jointly, is the impossible and misunderstood (by the laity) situation in which the doctor is found when testifying as an expert. It would seem impossible that often a number of perfectly honest physicians, known in the communities as men of unquestioned integrity, are found evenly divided and offering their opinions exactly contrary to each other in the case before them. There is nothing puzzling about it to the intelligent and informed who understand that practically all the questions asked are hypothetical, but each side basing its questions on diverse theories. In fact the favorite beginning of nearly all those questions is "Now doctor,

assuming the following incidents, actions or findings to have occurred, what would you say as to the cause or what are your conclusions?" Of course theoretically, the attorney has built up a question, *based upon what he has been told*, or upon a theory only favorable to his side of the question. Promptly the opposition asks its physician a question based upon entirely different theories, and of course, favorable to their client. He has not been employed to ask questions which might jeopardize his client's chances and the physician *must answer the question as framed* regardless of his opinion. These situations have brought much unjust criticism upon the profession of medicine; strangely enough they do not so affect the legal fraternity, notwithstanding the fact that approximately *one-half of them* are by the very reason of the situation always wrong or at least not sustained by jury or court. They blandly reply when twitted upon the unsatisfactory results that "the witness did not testify as he had talked about the case," or the theory upon which they rested was not sustained by the evidence which has been promised them. As to the rest, some doctor or doctors in that community come in for very unfair criticism. An occasional "face to face" discussion might prevent some of these injustices. Some of our judges are palpably unfair to and prejudiced against the testifying physician—sometimes the judge belongs to Christian Science or other cultist fields of *medicine*?—naturally the doctor in that court is liable to have unjust interpretations placed upon his evidence. Occasionally a trial judge is seen who makes the blundering attempt to shape a physician's testimony along the "medical" lines the Judge thinks correct and entirely different from the facts as the physician sees them. Occasionally the writer has felt like suggesting to "His Honor," "Now you just stick to the law, credit for which I give you as knowing, but please allow me to tell my medical facts as I honestly see them." However, the writer has also heard of the workings of the process of contempt of Court, so the thing was left unsaid, a wise, precaution, it is believed. We give the legal profession mostly credit for possessing the fullest integrity, sometimes a high degree of intelligence, nevertheless we should get together and acquire that strange mixture, a slight knowledge of the law, as well as a little of medicine.

"Shoemaker stick to your last."

—Pliny the Elder.

## A PROPER LAMBASTING IN PART

Considering a Review of Findings of the Committee on Medical care, White House Conference, February, 1931, Dr. Osgood<sup>1</sup> presents some very interesting facts, which lead to reflections, diagnosis, treatment, nursing and allied necessities in the proper care of medical cases. "Many wide gaps have been discovered to exist in an ideally protective chain," or at least one supposed to be ideal! In fact in some respects Dr. Osgood's report is a proper lambasting of some practices and actions of the medical profession, applicable to Oklahoma, as well as the Eastern states. Salient points are these:

"Education of child health agencies"; "The most importance to the physician of thorough practical training in the problems he must face, especially those connected with the promotion of health and the prevention of disease *has not been generally recognized in the Medical School*"; Pediatrics has become a major department of medicine, a specialty, if you will, but so necessary, the general practitioner and so inclusive that it must be recognized by general medicine and general surgery and all other specialties as the basic foundation upon which any lasting and livable structure of medical educations must be built"; "*The Pediatric curricula of our Medical Schools need careful, thorough study and reorganization if the physician is to continue to keep his place in the field of medical care for children.*"

The supply of nurses specializing in pediatrics is so meager as to be almost negligible while as to social service "Great as is the harvest, well-trained workers are few"—and the same probably applies to dietitians. As to physicians and nurses, the survey revealed, what we have long understood to exist, an over supply in some localities and an under supply in others. In spite of recent enormous growth in the number of public and private hospitals, and a seemingly adequate number of children's beds, there is probably inadequate provision as to special wards and a special pediatric staff. This is most true, of many of the general hospitals. Provisions for convalescent care is neglected. The situation as to physicians and psychological cases in children, is found, in the main, unsatisfactory. Severe criticism is made of nursing and nursing education. Noting that good nurses are almost as essential to the health and well-



being of the children of the United States as are physicians; on the grounds that they are essential in private, institutional and public health work, that they may make or mar the architectural plans of the expert, nevertheless there is a dissatisfaction over the fact that there is an oversupply of poorly prepared nurses and an undersupply of well prepared nurses. It is pointed out that the *real weakness of the schools of nursing is due to the fact that they are proprietary schools*, that with few exceptions they are owned by the hospitals, institutions which do not exist for the primary purpose of education. The committee feels that the education of nurses is as much a public responsibility as the education of physicians, school teachers, etc. The inadequacy of public health nursing is apparent when it is pointed out that 1500 counties in the United States make no provision for any public health nursing whatever.

The report in entirety should be read by all physicians and nurses.

1. New England Journal of Medicine, page 1241 December, 1931, Robert B. Osgood, M.D.

### DANGERS OF THE PRESENT ECONOMIC SITUATION

Many Oklahoma physicians are able personally to recall, panics and periods of depression in the past; they will all recall that sooner or later, the conditions improved, wages and salaries, both those of the working and the professional man, returned to normal, in a few months or a few years, and nothing was thought much of the matter. But, our present situation seems to be about the same plight of the medical worker the world over. In all countries there is either a sharp decline or total loss of income. The condition is looked upon by many men, with the most possible of pessimistic attitudes. *The Ohio State Journal*, naturally reflecting a rather large section in which men are out of employment due to closing of great manufacturing centers, regards the situation as world wide, serious and having great possibilities, in its potentialities for ending in very serious economic results. The first to feel the pinch of injury due to the unusual lack of circulating media, the loss of value of both manufactured as well as agricultural products, are the poor who, even in prosperous areas are often on the brink of suffering. Among the probable several million men and women either wholly out of employment or fortunate

enough to be employed at reduced wages or part time work, it is a sad and irritating commentary that many of these actually evade labor, if offered them, depending upon the already overworked civic organizations' hastily organized, and with poor financial equipment to protect, as best as they are able, those suffering, and with no sort of employment in view, at least for many months. It is the opinion of *The Ohio Journal* that charlatanism, quackery and their ilk, prey upon the deserving poor, extracting from them every possible cent. The regular medical profession, nursing services, hospitals, and great clinics of the country will be found working harder than ever, and regardless of ability to pay, caring as far as possible for the unfortunate.

Without reference to causes of the situation, whether partially due to international "jockeying" or to a simultaneous crash of confidence, the world over, we have the situation to meet, we will meet it, and, in the end everything will return to normal, as it has always done, as far back as the written history of the past records. There is no doubt that an undue lack of confidence has more to do with the matter than any other element. National movements in the form of exorbitant tariffs, which absolutely lock the doors to progress out of the difficulties have much to do with it, but it is difficult for the average citizen to visualize the cause and effects of such things, so, we find him siezed with a sudden fear, prohibiting his making any sort of investment or engaging in business, which would help relieve the situation. Banks hold billions of dollars, but they are entirely out of reach of the man of moderate means. He hears that the secretary of the treasury offers loans of millions of dollars, obtains the money over night at a ridiculously low rate of interest, but it is inaccessible to him for a short time of tiding over, or for execution of some project which would give the needy employment. The result is almost absolute business stasis. The ordinarily good business man actually fears to borrow money, if he can, and at any rate of interest; likewise he fears to lend his savings except to the Government itself. These things make the situation bad but they cannot and will not continue. Business activity has always returned to its proper basis. In the meantime it is the proud duty of the medical profession to care for the helpless. Most men are essentially honest and will not forget those

who befriend them in their hour of difficulty. We cannot believe that there is latent bolshevism or anarchy in the United States, on the contrary we believe that every worthwhile man will really carry on his work to the best of his ability and that in the end the reaction will result in a reversal of the order of things, and in the end all will be well. The physician will carry his load, render aid to those who are needy, and continue to fulfill his proud function as he has always done in the past. Personal satisfaction and pride in his achievement as well as material reward is his due, and that will eventually come to him by reason of his sacrifice in time of need.

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### SECTION CHAIRMEN ANNUAL SESSION

*Surgical Section:* Chairman, Dr. Fred S. Watson, 401 Commerce Bldg., Okmulgee, Oklahoma.

Secretary, Dr. W. G. Husband, Hollis, Oklahoma.

*Eye, Ear, Nose and Throat:* Chairman, Dr. A. L. Guthrie, Medical Arts Bldg., Oklahoma City, Okla.

Secretary, Dr. J. F. Gorrell, Medical Arts Bldg., Tulsa, Okla.

*General Medicine:* Chairman, Dr. Henry H. Turner, 1200 North Walker, Oklahoma City, Okla.

Secretary, Dr. Fred H. Dorwart, Barnes Bldg., Muskogee, Okla.

*Dermatology and Radiology:* Chairman, Dr. Charles J. Wood, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Carl L. Brundage, Medical Arts Bldg., Oklahoma City, Okla.

*Pediatrics:* Chairman, Dr. C. E. Bradley, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Geo. H. Garrison, 1200 North Walker, Oklahoma City, Okla.

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### TULSA COUNTY COMMITTEES

Doctor W. J. Trainor, Tulsa, Chairman of the Committee on Arrangements on behalf of the Tulsa County Society, announces the following Committees to handle the work of the annual meeting, at Tulsa, May 24, 25, 26, 1932:

*General Chairman.* W. J. Trainor, 1011 Medical Arts Bldg., Tulsa, Okla.

*Registrations.* C. C. Hoke, Petroleum Building, Tulsa.

*Finance.* W. Albert Cook, 1107 Medical Arts Bldg., Tulsa.

*Entertainment.* W. A. Showman, 409 Medical Arts Bldg., Tulsa.

*Hotels.* James Stevenson, 615 Medical Arts Bldg., Tulsa.

*Golf.* Charles J. Wood, 511 Medical Arts Bldg., Tulsa.

*Ladies' Entertainment.* Women's Auxiliary of The Tulsa County Medical Society, Tulsa.

*Reserve Officers.* Paul R. Brown, 517 Medical Arts Bldg., Tulsa.

*Scientific Exhibit.* Morris B. Lhevine, 1007 Medical Arts Bldg., Tulsa.

*Fraternal Dinner.* Ralph A. McGill, 1010 Medical Arts Bldg., Tulsa.

*Badges.* J. C. Brodgen, Mayo Bldg., Tulsa.

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### Editorial Notes—Personal and General

MURRAY COUNTY MEDICAL SOCIETY elected Doctor O. W. Sprouse, president; Doctor P. V. Annadown, secretary-treasurer, both of Sulphur, for 1932.

GREER COUNTY MEDICAL SOCIETY met January 19th, 1932, and elected the following officers: Doctors, G. P. Cherry, president; J. B. Hollis, secretary, both of Mangum.

DR. E. H. COACHMAN, Muskogee, has been appointed Health Officer for Muskogee County, succeeding Dr. Gene S. Atkinson, who has gone to Longview, Texas, to accept a similar position.

NOBLE COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors, B. A. Owen, Perry, president (re-elected); D. F. Coldiron, vice-president; J. W. Francis, Perry, secretary-treasurer.

TULSA COUNTY MEDICAL SOCIETY elected the following officers for 1932: President, Doctor C. J. Woods; Vice-President, Doctor N. R. Smith; Secretary-Treasurer, Doctor Carl F. Simpson, all of Tulsa.

PONTOTOC COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors, O. H. Miller, president; C. F. Needham, vice-president; Alfred R. Sugg, secretary-treasurer; E. A. Canada, censor; all of Ada.

McCLAIN COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors, I. N. Kolb, Blanchard, president; W. C. McCurdy, Purcell, vice-president; O. O. Dawson, Wayne, secretary-treasurer; B. W. Slover, Blanchard, delegate.

CLEVELAND COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors, B. H. Cooley, president; William A. Meyers, vice-



president; D. G. Willard, secretary-treasurer; H. B. Knisely, censor; C. S. Bobo, and D. G. Willard, delegates.

OKMULGEE COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors, T. C. Carlross, Morris, president; G. A. Kilpatrick, Henryetta, vice-president; M. B. Gilsman, Okmulgee, secretary-treasurer; N. N. Simpson, Henryetta, censor.

CREEK COUNTY MEDICAL SOCIETY met at Sapulpa, December, 1931, and elected the following officers: Doctors, J. M. Wells, Bristow, president; W. J. Neale, Drumright, vice-president; E. W. King, Bristow, secretary-treasurer; Chas. T. Schrader, Bristow, censor; W. P. Longmire, Sapulpa, and W. O. Starr, Drumright, delegates.

KIOWA COUNTY MEDICAL SOCIETY elected the following officers for 1932 at their regular meeting in January: Doctors, J. D. Winter, Hobart, president; C. R. Preston, Mountain Park, vice-president; B. H. Watkins, Hobart, secretary-treasurer; J. A. Land, J. L. Adams, Hobart, censors; H. C. Lloyd, Hobart, delegate.

THE AMERICAN BOARD for Ophthalmic Examinations will hold an examination in New Orleans on Monday, May 9th, 1932, at the time of the meeting of the American Medical Association. Necessary applications should be filed with Dr. William H. Wilder, 122 South Michigan Avenue, Chicago, at least sixty days before the meeting.

PAYNE COUNTY MEDICAL SOCIETY, met at Stillwater in December and elected the following officers for 1932: Doctors, W. B. Hudson, Yale, president; T. A. Love, Cushing, vice-president; Catherine Beregrun, Stillwater, secretary-treasurer. Doctors D. D. Paulus and Ben Nicholson, Oklahoma City, were the principal speakers of the evening.

CADDO COUNTY MEDICAL SOCIETY elected the following officers at their meeting, December 16, 1931: Doctors, Wade H. Van, Cement, president; Charles R. Hume, Anadarko, vice-president; P. H. Anderson, Anadarko, secretary-treasurer; R. W. Williams, Anadarko, member board of censors; J. H. Cantrell, Carnegie, delegate to annual meeting.

WASHINGTON COUNTY MEDICAL SOCIETY elected the following officers for 1932: Doctors J. P. Vansant, Dewey, president; S. G. Weber, Bartlesville, vice-president; J. V. Athey, Bartlesville, secretary; E. E. Beechwood, Bartlesville, treasurer; Drs. H. G. Crawford and J. V. Athey, delegates; Drs. G. V. Dorsheimer, Dewey; J. G. Smith, Bartlesville, alterhates.

LINCOLN COUNTY MEDICAL SOCIETY elected the following officers for 1932, at their December, 1931 meeting: Doctors A. M. Marshall, Chandler, president; F. C. Brown, Sparks, vice-president; J. M. Hancock, Chandler, secretary-treasurer; U. E. Nickell, Davenport; E. F. Hurlburt, Meeker; H. B. Jenkins, Tryon; Board of censors; W. D. Baird, Stroud, delegate.

KAY COUNTY MEDICAL SOCIETY met in January and elected the following officers for 1932: Doctors, R. B. Gibson, Ponca City, president; L. H. Becker, Blackwell, vice-president; L. G. Neal, Ponca City, secretary-treasurer; Dewey Mathews, Tonkawa, censor. It is the plan of this Society to use papers and discussions from their society, with general discussion by all present.

JACKSON COUNTY MEDICAL SOCIETY met at Altus in December, and the following officers were installed: Doctors E. A. Crow, Olustee, was re-elected president; Jesse Bird, Eldorado, vice-president; E. W. Mabry, Altus, re-elected secretary-treasurer; J. B. Hix, Altus, delegate; W. T. Ray, Gould, alternate; R. F. Brown, J. R. Reid, W. P. Rudell, Altus, censors.

THE OKLAHOMA COUNTY MEDICAL SOCIETY held its annual inaugural banquet and dance at the Oklahoma Club, January 9.

Dr. J. M. Alford, the outgoing president, served as toastmaster. Short talks were made by Dr. R. M. Anderson, president-elect of the Oklahoma State Medical Association; Dr. L. J. Moorman, Dean of the Oklahoma University Medical School, and president of the Southern Medical Association; and Dr. J. A. Hatchett, president of the local association for 1932.

DOCTOR FRANK H. MCGREGOR, Mangum, publicity manager for the Post-Graduate Course fostered by the State Medical Association and the University of Oklahoma Extension Department, reports that the meeting was very successful. Sixty-two physicians attended the meeting. There were also present at Oklahoma City, one hundred twenty physicians, sixty students and interns, and six nurses; Anadarko, sixty-two physicians, four nurses; Woodward, twenty-one physicians, ten nurses; Pawhuska, eleven physicians and seven nurses.

THE TWENTY-SEVENTH annual meeting of the Pottawatomie County Medical Society was held in the Aldridge Hotel, Shawnee, on Wednesday, January 13, 1932. A banquet was served to about sixty guests.

Officers for the year 1932 were elected as follows: Doctors, Alonzo C. McFarling, president; Wm. M. Gallaher, first vice-president; F. Clinton Gallaher, secretary-treasurer; David W. Gillick, Robert M. Anderson, John H. Scott, censors; T. Clayton Sanders, and J. A. Walker, delegates to the annual meeting; all of Shawnee.

Dr. J. M. Byrum, Shawnee, introduced the speakers for the evening: Dr. Springer, of the Springer Clinic, Tulsa; and Drs. Ruprecht, McKeller, Smith and Garrett. Installation of newly elected officers was conducted by Dr. J. H. Scott. Dr. A. M. Marshall, Chandler, amused the audience with his remarks under the subject "Charge to the New Officers." Others who were asked, and responded to the request for speeches were: Doctors Henry C. Weber, Bartlesville; G. N. Bilby, A. L. Blesh, LeRoy Downing Long, all of Oklahoma City. The scientific papers were discussed by Drs. Jeter, Douglas and Lain. The Society adjourned, but few retired at once from the meeting place.

## OKLAHOMA CITY CLINICAL SOCIETY

The Oklahoma City Clinical Society held its annual meeting last month and elected the following officers for 1932:

President, Dr. Ray M. Balyeat; Vice-President, Dr. Philip M. McNeill; Director of Clinics, Dr. Henry H. Turner; Secretary, Dr. J. C. MacDonald; Treasurer, Dr. Earl D. McBride.

Executive Committee: Dr. LeRoy Long, Sr., Dr. Horace Reed, Dr. Wann Langston, Dr. W. W. Rucks, Dr. Carrol M. Pounders, Dr. J. H. Hatchett, Ex-Officio.

October 31, November 1, 2, 3, were the dates selected for the third fall conference, and the officers are putting forth every effort to make this the most instructive and entertaining of any medical meeting in the Southwest this year.

Twenty of the outstanding members of the medical profession from this country and abroad have been invited as distinguished guest lecturers of the Society, and several new innovations are being planned.

Questionnaires are being sent out to the associate members throughout the Southwest, asking for suggestions regarding the conduct of the clinics, and it is hoped in this way to obtain definite ideas which will increase the value of these conferences. A tentative program will be sent out within the next few weeks.

## DR. SIGERIST TO LECTURE

Dr. Henry E. Sigerist, Professor of the History of Medicine and Director of the Institute of the History of Medicine of the University of Leipzig, will deliver two lectures, under the auspices of the University of Oklahoma School of Medicine and the Oklahoma County Medical Society, in Oklahoma City, February 29th.

The first lecture will be given at 4:00 o'clock in the afternoon at the medical school and is titled "Medicine of the Renaissance." The second lecture, "Medicine and Humanism," will be open to the public and will be given at the Chamber of Commerce at 8:00 P. M. This meeting will be preceded by an informal dinner in honor of Dr. Sigerist.

The honored guest is a brilliant student and lecturer and perhaps the world's foremost authority on medical history, and the medical profession of Oklahoma is indeed fortunate in having an opportunity to hear him.

Members of the Oklahoma State Medical Association are cordially invited to attend these lectures. It is requested that those desiring to attend the dinner in honor of Dr. Sigerist make their reservations beforehand through Dr. L. J. Moorman, Dean of the Medical School and Chairman of the Committee.

## ITEMS OF NEWS OF WOMAN'S AUXILIARY

Mrs. John Z. Mraz, Editor  
Oklahoma City

Our national president-elect, Mrs. Walter Jackson Freeman, is just home after a stormy voyage from Germany with her convalescent son.

The mid-year meeting of the Board of Directors of the Woman's Auxiliary to the American Medical Association was held in Chicago Friday, November 13, 1931, at the Pearson Hotel, Mrs. Arthur B. McGlothlan, national president, presiding.

Twenty-three were in attendance. The reports indicated that increased interest in every department is being shown by many of the state and county units.

Tentative plans were outlined for the program of the annual convention of the A.M.A. to be held in New Orleans, May 9-13, 1932.

It was decided to allow a two-hour period for conferences for those departments desiring same.

Before Mrs. McGlothlan, our national president, went to Kentucky in September, she had been asked to address, not only the Woman's Auxiliary, but the Kentucky State Medical Society as well. Her address, "Public Health Education," was printed in full in the November Kentucky Medical Journal along with the address, to the same Association, of the American Medical Association President, Dr. E. S. Judd.

The value of our organization was officially recognized by the Virginia State Medical Society when, at its annual meeting in October, the Auxiliary was asked to report with the regular standing committees.

The Pennsylvania nominating committee adopts an admirable plan, in setting forth with the names of the nominees, the reason for the choice of each nominee, including qualifications for the office.

In regard to programs it may be said there is a growing interest in and demand for programs dealing with mental hygiene. Dr. Ray Lyman Wilbur, secretary of the interior, asserts that "the mental health of the nation is its greatest asset, and mental hygiene is a vital part of preventive medicine." A division of mental hygiene is a part of the United States Public Health Service. Mental Hygiene was given the most important place on the program of the annual convention of the Medical Education, Medical Licensure and Hospitals (of the American Medical Association) in Chicago last February. It is receiving the attention of State Medical Associations, is an established division of the Health Department of State and National Congress of Parents and Teachers, and in the National Federation of Women's Clubs. It is not unlikely that it will become one of the subjects receiving special consideration by Auxiliaries in building our Educational programs.

From Oregon comes the following item:  
How Do You Do?  
Some pay their dues when due.  
Some when overdue.  
Some never do.  
How do you do?

At the Oregon Auxiliary "Stunt Dinner" a prize was given for the best auxiliary slogan.



The award went to "Doctors' Lives need Doctors' Wives."

Oklahoma County and Oklahoma City, particularly, are proud of two residents who recently attended a meeting and came home with the honors. Special attention is called to the fact that at the convention of the Southern Medical Association at New Orleans in November, Dr. L. J. Moorman, Oklahoma City, was elected president-elect of the Southern Medical Society.

One of our own Auxiliary members, Mrs. Carroll M. Pounders, Oklahoma City, was appointed general chairman of press and publicity of the Southern Medical Auxiliary.

Two delegates from Oklahoma County in attendance at the Southern meeting were Mrs. E. P. Allen and Mrs. W. K. West. Both ladies returned with such glowing accounts of all the lovely affairs planned for the visitors, it filled us all with the desire to attend the national convention in May.

Public relations committees of various state Auxiliaries are reporting interesting things. Oklahoma County Auxiliary to date this year has made contacts with the following; the local Red Cross, Tuberculosis Society, Crippled Children's Hospital, Oklahoma City Nursing Bureau, Goodwill Center and Parents and Teachers' Associations.

#### DOCTOR THOMAS F. WOOD

Dr. T. F. Wood of Sallisaw, Oklahoma, died at Sparks Memorial Hospital, Ft Smith, Arkansas, on December 21st, 1931, of uremic poisoning following an operation for ruptured duodenal ulcer. He was born in Iowa, July 10th, 1865. He graduated from the Marion-Sims Medical College in 1899. After graduating he practiced at Uniontown, Arkansas for a number of years, coming to Sallisaw twenty-two years ago. He was a physician highly esteemed by the profession and laity and enjoyed a large and successful practice.

He served in the Medical Corps of the army during the World War, was a 32nd degree Mason, was active in church work, having served for many years as Sunday School Superintendent for the First Christian Church of this city.

His funeral was held at Sallisaw from the Christian Church, the services at the cemetery being under the auspices of the Masonic Order. He is survived by his wife and two sons.

#### DOCTOR ARTHUR CHARLES WHITE

Doctor A. C. White, age 62, died at his home in Chickasha, January 18th, after a lingering illness.

Dr. White was born at Clayton, Michigan,

in 1872, and graduated from the Toledo Medical College in 1897. Soon after completing his work in the medical college he came to Chickasha and practiced as a physician and surgeon until the time of his illness.

He is survived by his widow, three daughters, a brother and sister.

Funeral services were conducted from the chapel of the Chickasha Funeral Home, January 19th, with the Rev. Clifford B. James, pastor of the First Christian Church officiating. Burial was in Toledo, Ohio.

Dr. White was a member of Genoa, Ohio lodge, A. F. and A. M., Chickasha Chapter Royal Arch Masons, Council No. 4 of the Cryptic Masons, DeMolay commandery, Knights Templar and the India Shrine Temple.

#### DOCTOR ELMER CLARENCE BYRAM

Doctor E. C. Byram, Okmulgee, died January 23rd after a short illness. Dr. Byram came to Okmulgee in 1917 and engaged in general medical practice. He was born May 4, 1882, in Clark, Missouri. He attended the University of Missouri, receiving his degree of bachelor of science. He then entered the postal service as a clerk in St. Louis; later deciding to study medicine, he enrolled as a student in the Barnes Medical School, now the University of Washington, St. Louis, in 1908. He practiced medicine in St. Louis until he moved to Okmulgee in 1917.

Dr. Byram is survived by his widow, parents and two sisters.

Funeral services were held January 25th, with burial at Mexico, Missouri.

#### DOCTOR E. N. WRIGHT

Dr. E. M. Wright, Olney, born April 3rd, 1858, a physician who served his life time in Indian Territory and eastern Oklahoma, and who was the son of a very distinguished Choctaw family, died Friday night, January 8th, in University Hospital at Oklahoma City. He was born at Mt. Pleasant near the old Armstrong Academy east of Caddo. He was a son of Rev. Allen Wright, who came as a boy with the Choctaws from Mississippi, in 1833. The widow and two daughters, Miss Muriel Wright and Mrs. Guy C. Reed, of Oklahoma City survive.

Dr. Wright was very prominent in the ranks of the Choctaw people, and had held several positions of trust, once serving the nation as National Agent, once as the delegate to Washington during the term of Governor Green McCurtain and also was a member of the Choctaw-Chickasha commis-

sion which negotiated with the Dawes commission on the proposed opening of the country.

Dr. Wright attended Union college at Schenectady, N. Y., and also graduated from the Albany Medical College. He did Post-Graduate work at the College of Physicians and Surgeons at New York City. He was the first president and one of the organizers of the Medical Society of Indian Territory.

My first professional contact in Indian Territory when I located here in 1905, was with Dr. E. N. Wright, and it was a great surprise to me to find such a keen, well trained mind in an unsettled, wild location as was Olney, Indian Territory, at that time. Alert to the latest developments in medicine, trained in methods of diagnosis, thorough, yet conservative in treatment, he stood in this new country a tower of strength among his professional brethren. He not only recommended, but practiced, a very high standard of professional ethics, and along this line helped to lay the foundation upon which has been erected in this State a structure of professional life second to none.

On Sunday, January 10th, 1932, this great man was laid to rest in the family burial plot at Boggy Depot, among great men and noble women prominent in the early history of the Indian Territory who have preceded him. The simple ceremony, conducted in the presence of the surviving family and a few intimate friends, was very impressive.

We witnessed these last rites always with the thought that a great and good man had passed, and another member of an illustrious family had closed the book of life. He has gone to receive a just reward for the unselfish service rendered the people of this section of Oklahoma, and may God's richest blessings accompany his departing spirit.

L. S. WILLOUR.

#### PROPER PLACE OF PHYSICAL THERAPY IN TREATMENT OF FRACTURES

Clay Ray Murray, new York (Journal A. M. A., July 25, 1931), is convinced that physical therapy, properly used, can be of great value in minimizing residual disability and deformity and in cutting down the period of treatment necessary to secure an end-result; he is equally convinced that, as generally practiced the country wide today in fractures, it frequently accomplishes neither of these objects but results in increased residual disability and prolongs the time needed to secure the end-results. The fault lies in a generalized failure to realize (1) what treatment of fracture is intended to do, (2) what physical therapy can and cannot do and (3) what part the patient plays in the treatment. The fault is shared equally by the physicians and the physical therapists to whom they send the patients. The result is commonly the neglect of physical therapy during that stage of treatment when it is most valuable, and the attempt in the later stages

to substitute physical therapy for the patient's part in the treatment. Physical therapy as a method of treatment in fractures can be put on a sound logical basis. One might ignore for the moment the various means of carrying out the treatment and consider what it should do to be of value. How does it fit into the modern conception of treatment of fracture? The ideal treatment of a fracture would embody the immediate anatomic replacement of bone fragments without mental or physical trauma to the patient and the immediate abolition of all pathologic changes in the bone and soft parts without the slightest interference with the usual function of the part or the usual life of the patient. The problem in each fracture is to approach this unattainable ideal as closely as one can. This is accomplished in general by early reductions under anesthesia, by the employment of a minimum of immobilization for as short a time as possible and by allowing and encouraging the active use of the part within pain limits as soon and as often as possible. The value of these principles of treatment is being more widely appreciated constantly. What is not so widely appreciated is the fact that in the part as a whole there exists an extensive pathologic process: torn and thrombosed vascular and lymphatic channels, lacerated tissues infiltrated by hemorrhage, inflammatory exudate with its cellular constituents, and the transudate of edema from circulatory and lymphatic obstruction. More than that, the organization of such infiltration into tissue is rapid. It is measured in hours and days—not in weeks and months. It can be dispersed while it is exudate, hemorrhage and cellular infiltration, and this is the time to attempt to get rid of it, not after it has become organized and can no longer be dispersed. How is it to be removed from the part? There is only one mechanism—circulatory. The problem is to restore the circulatory status of the part to normal as soon after the injury as possible. How is this to be accomplished? 1. The bone lesion should be treated by early reduction under anesthesia, with a minimum of trauma, and by as inextensive an immobilization as possible in apparatus that will allow of the maximum early active use of the part within pain limits. The following of these principles is responsible for the increasing frequency of the use of traction suspension and operative fixation followed by active mobilization. 2. Appropriate physical therapy should be used from the beginning of treatment. This is the much neglected opportunity for optimal benefit from physical therapy.

#### HYPOGLYCEMIA ASSOCIATED WITH HYPERTROPHY OF ISLANDS OF LANGERHANS

According to Arthur W. Phillips, Philadelphia (Journal A. M. A., April 11, 1931), hypoglycemia appears to be due primarily to pathologic changes in the liver, endocrine glands or pancreas, and is seen in various diverse conditions. A case is presented which clinically appeared to be uremia with low blood sugar estimations. Autopsy showed hypertrophy of the islands of Langerhans and nephritic changes. It would seem that hypertrophy of the islands of Langerhans may be a cause for hyperinsulinism and hypoglycemia.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## DERMATOLOGY AND SYPHILOLOGY

Edited by James Stevenson, M.D.  
615 Medical Arts Building, Tulsa

**The Treatment of Cancer of the Lip by Electrocoagulation and Irradiation.** Pfahler, G. E., and Vastine, J. H. *Journ. A. M. A.*, 98:32, Jan. 2, 1932.

The paper is a review of 253 cases covering a period from 1902 to 1930 inclusive. Nearly all these cases occurred on the lower lip and in smokers, and repeated small traumatism is encountered in most of the histories. The two main forms are described: the papillary form, which is slow growing, and invades the deeper tissues and lymph nodes relatively late; and the ulcerating infiltrating type, which metastasizes early. Early in the disease the two types are nearly alike and it is in this stage that treatment should be instituted. The public should be taught that when one notices a change on the lip indicated by crusts, scales, fissures, "fever blisters," or a warty growth that does not heal within two weeks his physician should be consulted. There should be no deaths from cancer of the lip.

Of recent years the authors do routine biopsies for scientific records, but treat all suspicious cases at once without waiting the result of microscopic examination. The technic of electrocoagulation is described, and following this X-ray therapy is given over the lip and chin, and in the submental and submaxillary regions. In some cases radium also was used.

The results obtained are quite remarkable. In all primary cases, even when there were palpable lymph nodes, there has been 95.5 per cent of recoveries. In recurrent cases 71 per cent have recovered. Of all cases (179) that were treated more than five years ago, 85.5 per cent have recovered.

**A New Antimony Compound in the Treatment for Leprosy.** Kingsbury, Jerome: *Arch. Dermat. and Syph.* 24:1053 (Dec.) 1931.

The results obtained by Causton, Wildish and others in treating leprosy with various antimony compounds is summarized. C. N. Myers has prepared a compound, 3-3 diamino 4-4 dihydroxy arsenostibino benzene, called by the author M 303, which is believed to be less toxic than antimony and potassium tartrate, and hence can be given in larger doses. This preparation is soluble in water, but is acid in reaction, and in preparing it for use it is alkalized by adding .9 cc. of normal sodium hydroxide per decigram. .1 gm. of the resulting disodium salt is diluted with 10 cc. of physiologic sodium chlorid solution. This dose is given slowly intravenously.

In four cases of leprosy, two of the nodular

type and two of the maculo-anesthetic type, treated by this method, there is one apparent cure, while the other three were much improved when last seen. The author considers his results superior to those obtained by the use of the ethyl esters of chaulmoogra oil.

## TUBERCULOSIS

Edited By  
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**The Pathology of Bronchiectasis and Lung Abscess.** B. S. Kline. *The American Review of Tuberculosis.* December, 1931.

**Bronchiectasis.** The essential abnormality in bronchiectasis is absence or destruction of the muscular and elastic tissues of the bronchial wall. The bacteria commonly found in necrotizing bronchopulmonary lesions are, oral spirochaetes, fusiform bacilli, vibrios and tuberculosis bacilli; those found in less severe lesions are, streptococci, influenza bacilli, staphylococci and other organisms from the upper respiratory tract. Bronchiectasis may be classified as follows: (1) Congenital. (2) Acquired: (a) Primary, due to changes in the bronchial wall; (b) Secondary, due to changes outside the bronchial wall. The congenital type may result from anomalous bronchial or pulmonary development, is rare and when extensive the lung presents a honeycombed or sponge-like appearance due to multiple branching cyst-like dilatation of bronchi with thin walls. The acquired type is the commonest form. In childhood it develops following whooping cough, measles, sinus infections, aspiration of foreign bodies, bronchopulmonary abscess or gangrene and tuberculosis. In adults it commonly follows putrid bronchitis or bronchopulmonary gangrene, it less frequently follows sinus infections, other types of bronchitis and bronchopulmonary tuberculosis. The principal lesion in the secondary acquired type is most frequently a complete atelectasis involving part of all of a lobe.

**Lung abscess.** Lung abscess is an area of pulmonary suppuration caused by pyogenic organisms, usually staphylococci reaching the lung thru the blood stream from a distant focus of suppuration or aspirated from the oral cavity. Altho it is some times hard to distinguish between abscess, putrid abscess and early gangrene it is very necessary since acute pulmonary gangrene does not respond well to abscess treatment but is frequently cured by arsphenamine therapy. Embolic abscesses are usually small, multiple, more or less spherical, occurring in a number of lobes and associated with areas of suppuration elsewhere in the body. Smears and cultures show pyogenic organisms. The lesions are gray or yellow with little odor. The bronchogenic type of abscess is a local focus of suppuration usually larger than embolic abscesses and ordinarily oc-

curing in areas of pneumonia or following a bronchitis due to aspiration of an infected foreign body. Smears and cultures show the pyogenic organisms, usually staphylococci, together with other mouth cocci. The lesions are gray or yellow with little odor.

Pulmonary abscess and pulmonary gangrene while almost always treated as one disease are separate entities, gangrenous lesions being brown or green and very foul smelling. The local process is much more severe with greater general intoxication and much poorer prognosis in untreated cases. Sputum in abscess has little odor, is viscid, yellow and contains pyogenic organisms while in gangrene it is foul smelling, thin or gray-green and contains oral spirochaetes, fusiform bacilli and vibrios. Gangrene occurs more frequently in adults; abscess more often in infants and children. Altho gangrene is a much more severe process than abscess the prognosis in early cases properly treated is better than in abscess according to the experience at the Mount Sinai Hospital, Cleveland, where 11 of 15 cases of gangrene treated with arsphenamines recovered while 6 of 9 patients with aspiratory abscess died.

While most observers believe that the organisms causing abscess and gangrene are aspirated from the oral cavity, some think that they reach the lung thru the blood stream—especially in the postoperative group of infections. Preoperative oral care has been given on the wards at Mount Sinai Hospital for the past three years during which the incidence of postoperative pulmonary disease in the treated group has been much lower than in the untreated. This would seem to show that these conditions can be prevented by proper oral hygienic or therapeutic treatment.

#### **Extrapleural Paraffin Filling in Thoracic Surgery. W. L. Rogers. The American Review of Tuberculosis. December, 1931.**

Extra pleural compression is one of the recognized European procedures in thoracic surgery. The operation is usually done under local altho supplementary nitrous oxide is necessary in some cases. It is done best with the patient in a sitting position. There is considerable difference in opinion as to the best method of approach but the author considers the posterior route preferable as the apex is thus more accessible and the strongest adhesions are apt to be found posteriorly. One and a half to two inches of the second or third rib are resected subperiosteally thru a paravertebral incision 5 to 6 inches in length. The muscle is then dissected away and the parietal pleura separated from the endothoracic fascia. The extrapleural cavity is then filled with especially prepared paraffin and the wound closed without drainage.

The indication for its use as a primary operation are: (1) Unilateral disease of the upper lobe with apical cavitation, preferably small, multiple cavities rather than large, peripherally situated thin walled ones, showing a definite fibrotic tendency and in which pneumothorax has failed because of adhesions. (2) Cases of bilateral apical cavitation, showing a fibrotic tendency, the underlying lung tissue on both sides being free and in which pneumothorax has failed. In this group a bilateral apical operation may be done in two stages. It is indicated as a secondary operation to produce a local increase of pressure. Extrapleural compression has rightfully

won a place in the surgical treatment of chest disease and the results are gratifying if the specific indications are observed.

#### **Diabetes and Pulmonary Tuberculosis. Andrew L. Banyai. The American Review of Tuberculosis. December, 1931.**

The incidence of tuberculosis in diabetics according to the complete date of a number of authors and based on the observation of 8,520 patients, is 2.6 percent or about three times higher than the average tuberculosis morbidity in the United States. An analysis of 31 cases is presented here.

Tuberculosis may complicate either mild or severe forms of diabetes. It often has an insidious onset and assumes atypical forms; unusual, subapical or perihilar localization is frequent; bronchopneumonic lesions dominate the picture. The nature and location of the disease, the fact that acidosis is liable to mitigate or suppress allergic reactions and that in the aged (the majority of these patients being in the older age groups) the symptoms of tuberculosis are often inconspicuous and the physical signs hard to detect, may account for the lack of symptoms and physical signs in early cases. Symptoms become more manifest and physical signs more easily detectable as the disease advances. Pulmonary tuberculosis must be considered in the presence of respiratory or constitutional symptoms or signs, or when the diabetes is under control and the patient still not doing well.

Institutionalization is an essential part of the treatment with especial emphasis on diet, insulin and surgical measures. Tuberculosis in these patients is not necessarily fatal if both diseases are properly treated as of these 31 patients, 10 died, 10 were unimproved, 5 improved, 2 quiescent and 4 apparently arrested. No focal or constitutional reaction has been observed from the use of insulin. The indications for surgical treatment are the same as for nondiabetic patients, one patient of this group was treated by artificial pneumothorax, one by bilateral pneumothorax and 3 by phrenic-nerve block.

#### **Pulmonary Tuberculosis Complicating Diabetes Mellitus. Henry B. Gotten. The American Review of Tuberculosis. December, 1931.**

Pulmonary tuberculosis complicating diabetes is a serious condition carrying a mortality rate of over 50 percent in the first year after onset. These patients apparently have a lower state of resistance than the non-diabetics. However, with a most careful course of treatment, embracing the use of insulin and a proper adjustment of diet for maintaining adequate nutrition, many can be restored to health.

#### **Some Considerations of the Nutrition Problem in Pulmonary Disease. Burgess Gordon and En Shui Tai. The American Review of Tuberculosis. December, 1931.**

From a study of the type and quantity of food consumed by individuals before and after the onset of pulmonary disease and of the dietaries of "contact" cases both children and adults, made at the Chest Department of the Jefferson Hospital during the past four years it often appears that a sharp decline in the caloric intake precedes the



onset of demonstrable disease by one to two years. Induced overnutrition appears helpful in enabling the individual to "carry" infection with less untoward effect than would be the case in malnutrition. The influence of bodily insulation and greater fluid reserve to meet variations in temperature are considered as possible explanations. The favorable effects of codliver oil concentrate in acute upper respiratory infections and the use of a brewer's yeast compound containing vitamin B and manganese in a few patients with asthma suggest that accessory substances are helpful in the general management of pulmonary disease. So far as determined there are no definite indications that the dietaries used in this study specifically influenced the healing of the tuberculous lesions.

**Salt-Restricted Dietary with Patricular Application to Tuberculosis Therapy.** Edgar Mayer, M.D. *The Journal of the American Medical Association.* December 26, 1931.

While sufficient research has not yet been made on diet in tuberculosis to evaluate it correctly it would appear that the Hermannsdorfer-Sauerbruch Diet and the even more restricted Gerson Diet are distinct therapeutic aids in the treatment of lupus vulgaris and occasionally in bone and joint tuberculosis; their value in the other forms, however, particularly pulmonary tuberculosis, is yet to be determined.

The essentials of this diet are: 1. The all but complete exclusion of sodium chloride with a sodium-poor but calcium-rich salt compound being used as a substitute. 2. (a) A large percentage of uncooked fresh vegetables in the diet. (b) Preparation of cooked vegetables in waterless cookers. 3. Marked restriction of meats. 4. Restricted water intake but fairly liberal amounts of freshly expressed fruit and vegetable juices. 5. Various spices to increase the flavor of the dishes. 6. A mineral compound chiefly calcium lactate and calcium phosphate and a cod liver oil, each given three times daily. 7. Rich fat and protein but low carbohydrate elements. The aim is dehydration of the tissues and altering the body's mineral metabolism.

In this question of mineral salt metabolism, it is possible that certain constitutions will react favorably to the withdrawal of table salt, also that some will improve on a larger vitamin intake, the two factors correlating in some way biochemically. A universally efficacious curative treatment for tuberculosis does not exist but the resistance of inferior constitutions and of defective or deficient organic functions can be raised by correct dietary treatment, and the raising of this resistance represents the meritorious aspect of these new endeavors.

**Roentgenographic Appearance of the Thorax after Rib Resection for Pulmonary Abscess.** John T. Farrell, Jr., M.D. *The Journal of the American Medical Association.* December 26, 1931.

Since adequate postoperative examination is often impossible because of the incision and dressings and also because the patient is too ill to be subjected to thoro auscultatory and percussion procedures it is important that the roentgenograph changes following operation be recognized as this may be the only form of postoperative ex-

amination possible. It is necessary to get a roentgenogram before operation in the position in which the patient is going to be after the operation as it is difficult to compare stereoscopic films with one taken in bed after the operation and then try to estimate the change which has taken place in the lung.

From the study of this series of 23 patients on whom rib resection was done for drainage of pulmonary abscess, it seems that the postoperative roentgenographic appearance of the chest is determined principally by the number and portion of the ribs resected, by the character of the pleural changes, and the postoperative course of the disease. Changes in the postoperative roentgenogram are: (1) Structural changes involving the skin, subcutaneous tissues, pleura and lungs which are influenced by the type of operation, the size and location of the abscess, the character of the pleural complications and the postoperative course. (2) Positional changes, which are not the marked feature of abscess either before or after operation that they are of other pulmonary diseases. Elevation of the diaphragm is seen in those cases associated with pleural edema or empyema and is probably due to fixation of the lung by fibrosis developing at the site of abscess while the lung is compressed by the pleural complication; changes in the position of the heart or trachea are seen more rarely.

**The Bronchoscopic Treatment of Bronchiectasis and Lung Abscess.** Louis H. Clerf. *The American Review of Tuberculosis.* December, 1931.

In the treatment of pulmonary abscess, bronchoscopy should be considered a part of the conservative plan of treatment if there is evidence of interference with drainage. Every case of unilateral bronchiectasis should have the advantage of diagnostic bronchoscopy to rule out possible endobronchial lesions. This is particularly important if surgical treatment is contemplated. In bilateral bronchiectasis occurring in adults, bronchoscopy is an aid to the internist and its benefits are temporary; in children, bronchoscopy combined with other appropriate measures is often followed by excellent results.

**The Surgical Treatment of Bronchiectasis and Lung Abscess.** Stuart W. Harrington. *The American Review of Tuberculosis.* December, 1931.

Pyogenic pulmonary suppuration is usually progressive, the rapidity with which the pathological changes take place depending on the source, type and virulence of the infecting organism and upon the resistance of the tissues to the bacterial invasion. The diagnostic terms used to designate the extent and character of the lesion depend on the pathological manifestations at the time of examination; bronchiectasis may be used to indicate more or less diffuse involvement of the lung parenchyma in which the infection is chiefly confined to the bronchi; abscess of the lung indicates a more localized type of infection with more pulmonary parenchyma than bronchi involved. It is difficult to draw a sharp line as it is rare for either lesion to exist as a distinct, uncomplicated entity. The most common causes are (1) pulmonary infection usually following streptococcal pneumonia, (2) aspiration of a foreign body or of septic material during an operation on

the upper respiratory tract (especially tonsillectomy under general anesthesia) and (3) septic emboli which may follow any operative procedure or occur spontaneously. The onset and course of the disease is helpful in determining the type of infection and the urgency of treatment; cases with acute onset and rapidly progressive symptoms are usually of the multilocular bronchiectatic type following aspiration of infected material. Early treatment is necessary in these cases since spontaneous healing rarely occurs and if not effectually treated the condition becomes chronic and will require more radical measures. If the course of disease is intermittent there is partial drainage and the urgency of radical treatment is not so great.

Roentgenological examination is of great aid in determining the presence, type, and location of lesion. Bronchoscopic examination should be made in all cases where operation is contemplated unless definitely contraindicated as this method of examination gives the most accurate information as to the extent and type of infection present. In cases of carcinoma of the bronchus or of foreign material in the bronchus not shown by X-ray it is the only method of determining the cause of the disease. In cases of foreign body, bronchoscopic removal often results in complete healing. Since all patients suffering from pulmonary suppuration require medical treatment and may require surgical, and since the effectiveness of treatment depends on early diagnosis and accuracy in the localization of the lesion, it seems necessary that such patients be treated under the close cooperation of an internist and a surgeon both of whom have had special training in the diagnosis and treatment of thoracic disease and are thoroly familiar with bronchoscopic technique and X-ray interpretation.

Postural drainage and bronchoscopic lavage are of great assistance in facilitating drainage in those acute abscesses rupturing spontaneously into a bronchus, particularly of cavities centrally situated; salvarsan is a great help in many cases in eradicating the saprophytic organisms associated with these infections. It is not wise to continue conservative measures more than six or eight weeks unless there has been gradual marked improvement. It is generally believed, however, that about 50 percent of these patients will respond to such measures. In the remaining 50 percent it is important to recognize the need for surgical treatment before the disease becomes progressively worse. Altho the surgical indications are not definitely established it is known that adequate and continued drainage is required as in abscess elsewhere in the body. Surgical treatment should be as conservative as is possible and consistent with effectual treatment. The most common operative procedures are artificial pneumothorax, phrenicotomy, surgical collapse and partial pneumonectomy. The type of operation depends on the time in the course of disease that treatment is begun, the situation and extent of the lesion and the general condition of the patient. In most cases multiple operations are required to effect cures. Of the 111 cases reported here there were 10 deaths, 64 cases were relieved of symptoms, and 16 cases were not relieved.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**The Electrosurgical Unit As An Aid In General Surgery.** By H. Lilienthal, M.D., S.G. & O., LII. Feb. 15, 1931. P. 513.

The author has done several operations on the chest, abdomen and breast. In his small series there has been no recurrent or secondary haemorrhage and he is of the belief that wound infection is definitely reduced. His opinion is that the method promises to be a great aid in general surgery. In his admittedly small number of cases he has found healing to be normal in rate and firmness, although I notice that he recommends that the sutures should be left longer than when the wound is made with an ordinary scalpel. He has been unable to form any conclusions as to the likelihood of keloid. When using local anaesthesia there have been more subjective reactions of pain and discomfort than when the scalpel was employed.

In general surgery he thinks that the principal use of the method will be for incisions in soft parts, including the skin, and also in the removal of lesions outside of the body cavities.

He states that outstanding features of electrosurgery are saving of time, greater assurance of asepsis, and reduction of what may be called the "massage effect," so dangerous in operating through infected or neoplastic structures.

—LeRoy Downing Long.

**The Rate of Healing of Electrosurgical Wounds as Expressed by Tensile Strength.** By J. D. Ellis, M.D. Journal A.M.A., Volume 96, January 3, 1931. P. 16.

The interest in electrosurgery shown during the last decade is due to the development of several valuable electrosurgical knives. The novel features of these knives depend upon technical improvements in construction providing for:

1. A very high frequency oscillating current.
2. The elimination of the irritating "sparking" of the older machines.
3. Facility to modulate the currents very delicately.

The use of cutting currents with just enough dessication to control capillary haemorrhage without resulting in coagulation and slough has made justifiable many surgical operations in easily bleeding fields that would formerly have been considered foolhardy. Examples of this are the revolutionizing of brain surgery described by Dr. Cushing; partial hepatectomy and splenectomy for laceration; widespread excisions of facial cancers without subsequent slough; and operations on the jaundiced patient who is prone to bleed freely from the incisions.

The enthusiasm for the new surgical current has led to some quite optimistic reports regarding uniformly primary healing and rapid cicatrization of electrosurgical and clinical observations, and it seemed to him that more precise and scientific examination of the healing processes in these wounds should be made. In this way some practical criteria of the average rate of healing and comparative strength of electrical and scalpel



wounds in various organs and tissues could be furnished. It would then be possible to decide when to employ electrosurgery. He determined to study the tensile strength per centimeter of length, at various time intervals, of healing incisions in skin, muscle and stomach. The experiments were performed on dogs, 120 being operated on under aseptic surgical technic, with ether as the anesthetic.

In the skin experiments longitudinal incisions were made on the shaved backs, parallel to the midline. Equidistant, on the opposite side, control scalpel incisions were made. The incisions were closed with subcuticular silk sutures. At the completion of the experiments the animals were killed and sections of the wound of 1 cm. length were pulled apart with a balance scale devised for the purpose. The silk was removed before each section was tested.

The relative frequency of primary healing in these electrical and scalpel wounds was compared. Of 38 wounds produced with an electrical scalpel, 23, or approximately 60%, showed primary union, while the remaining 40% remained ununited on the 22nd day. In an equal number of scalpel wounds produced as controls, 97.5% healed by primary intention. This wide discrepancy shows the unreliability of any expectation of primary union in the electrical incisions. When union did occur the wound was somewhat weaker than in corresponding scalpel wounds, and in the case of heavy dehydration did not attain a strength equal to the scalpel wound in 21 days. The stomach and muscle incisions electrically produced showed the same percentage of primary union as the scalpel wounds. The electrically produced stomach wounds were notably weaker at about the midpoint of healing. The electrically produced muscle wounds were of almost equal strength with the scalpel wounds through the entire period.

The author's conclusions are that his observations do not argue against the employment of the electrosurgical knife for making a surgical incision when clear cut indications for its use present themselves, but it is his conviction that this method cannot be considered as a practical substitute for the scalpel for routine use.

Comment: This is an important study on the rate of healing of operative wounds produced by electrosurgical means. He has shown that primary union occurs less frequently in wounds made by the electric current than in wounds made by the scalpel. He has also shown that the electrical wounds are weaker and require more time to develop satisfactory tensile strength.

In my own experience there have been several instances where skin incisions made by the electrosurgical knife have been dressed on the ninth day and the sutures removed, at which time the wound margin separated. There was no evidence of union and this was in the absence of any infection. I have also had one instance of rather brisk secondary haemorrhage. In radical breast operations it has been my experience that there is greater loss of blood with this method than when the scalpel is employed.

I am firmly convinced that the method, while there are certain indications for its use, cannot be satisfactorily employed as a routine. We must continue to use the scalpel as a routine and to employ electrosurgery only where definitely indicated.

—LeRoy Downing Long.

**Conservative Gynecology: Its Rationale and Its End Results.** By C. Jeff Miller, M.D., New Orleans. *New Orleans Medical and Surgical Journal*, pp. 117-121, Vol. 84, No. 2, Aug., 1931. Read at the sectional meeting of the American College of Surgeons, Little Rock, January, 1931.

This excellent article by Dr. Miller, could well be carefully read over and over again by anyone who treats diseases of the female genitalia.

His introduction follows:

"I have quoted many times before, and I expect to quote many times again, a wise remark of Howard Kelly's, to the effect that surgery, developing in the hands of men, has dealt too lightly with mutilating operations in women, and that if the case might be reversed for several decades, with women operating and men suffering the mutilation, there would undoubtedly be a large prepossession in favor of a wise conservatism."

His comment, made many years ago, is still timely, for gynecology, in the modern phase, has "gone surgical." There is a general tendency to resort to operation without a careful consideration of simpler measures which would be quite as effective for the patient, and very much safer. There is a general tendency to remove the female sexual apparatus, in whole or in part, on promiscuous and casual indications which, in another part of the body, could only be considered trivial. There is a general tendency, since the ablation of the genitalia is not a procedure which carries an inordinately heavy risk, to disregard the fact that a woman's whole scheme of existence takes its points of departure from her pelvic organs.

"Conservatism, however, is an entirely relative term. Its implications vary in different ages. A century ago it was conservative to refrain from all surgery except such as was absolutely life-saving, and hundreds of women died from uterine and ovarian tumors which today the least radical of gynecologists would feel warranted in removing on the simple indication of their presence. Seventy-five years ago, when operation for such conditions had been generally accepted, it was conservative to resort to it only when the tumor was very large or the patient had suffered a good deal. Fifty years ago it was conservative to treat uterine fibroids by oophorectomy, a procedure little short of barbarous to us of this age.

"Plainly it is a case of other times, other manners. But at that, it is not always easy to define conservatism. There is no such thing as an operation which is fundamentally conservative, even though, speaking categorically, preservation of structure and function is always to be preferred to their ablation. Circumstances alter cases, and a sense of proportion is necessary, though it must be constantly borne in mind that a perfect surgical result, desirable though that be, is never the only result, for when a woman's pelvic organs are in question, function, other things being equal, deserves quite as much consideration as do mortality and morbidity."

Dr. Miller continues by first discussing the part played by social and economic factors in management of gynecological conditions, stating that he has little patience with the surgeon who boasts that they never enter into his calculations.

The subject of pelvic infection is briefly, but sanely and rationally, reviewed. The basic principles involved may be gleaned from the following quotations:

"A woman's sexual organs are the basis on which her whole life is founded, and her sexual sanctity—I feel very strongly in this regard—should be violated only in the face of an urgent need. Which need, I might add, a single attack of salpingitis rarely constitutes.

"When once the necessity for operation has been established, however, then radicalism becomes conservatism. When the abdomen has been opened, if the disease is specific or tuberculous, then bilateral salpingectomy is the only procedure which can guarantee against its recurrence. In tubal disease, almost more than in any other pathology, the sanest surgeon, the safest gynecologist, is he who refrains longest from the practice of his art, but who, when obliged to exercise it, tempers his conservatism with sufficient radicalism to ensure for his patient a permanent cure.

"But his ruthlessness must not be extended to organs not involved in the infectious process. Routine removal of the ovaries, for instance, after either salpingectomy or hysterectomy cannot be too strongly condemned." "I am aware that the final facts are still in dispute as to the fate of conserved ovaries, but until we know more of their part in the internal economy after the menopause, we should not remove them without due cause, quite aside from the fact that excellent results from the conservative method are reported by many competent authorities."

To quote again from the text concerning hysterectomy:

"We have come very far from the surgeon who, as late as 1866, said, 'I shrink and have a feeling of terror come over me when I find myself obliged to do a hysterectomy,' but it might not be altogether a bad thing if there were some such feeling of fear abroad in surgical circles today. For hysterectomy has become the most abused operation in gynecology. It is still being performed for the so-called essential uterine bleeding, though it is not warranted in one case in a hundred, since the uterus is simply responding to the evil stimulation of dysfunction elsewhere. It is still being performed for uterine bleeding when the trouble is extrauterine and even extrapelvic. It is still being performed, though I grant usually unintentionally, for bleeding that has its origin in some complication of pregnancy.

"Hysterectomy is often performed very unnecessarily for uterine fibroids, for which either myomectomy or irradiation should always be first considered if the tumor does not fall into that small group of symptomless growths which need no treatment at all."

"Irradiation is another procedure which can be either conservative or radical."

"Hysterectomy for hydatidiform mole has always been an unwarranted procedure."

The last paragraph follows:

"The conclusions of the whole matter obviously does not lie in categoric classification. The simplest procedure may be at times a very radical one, the most radical procedure may be at times true conservatism. The important consideration is that not only the immediate but the end results of every mode of treatment shall be evaluated; not only operative mortality but ultimate function; not only the patient's physical well-being but her mental and spiritual equi-

librium. For gynecologists, beyond all other physicians, hold the happiness of women in their hands quite as much as their lives and their health, and it behooves them to take earnest heed that they preserve them all alike."

This is a splendid resume of a difficult subject which must be admitted loses much of its force by omission and quotation.

It is such an important viewpoint which is distinctly fundamental in the proper practice of this series of diseases that it is well to pause and rehearse the underlying feeling of this article before definitely deciding the therapeutic measure to be applied in any gynecological pathology.

—Wendell Long.

**The Differential Diagnosis of Acute Initial Salpingitis and Appendicitis by Means of a Menstrual Sign.** By James V. Ricci, New York City. *American Journal of Obstetrics and Gynecology*, Vol. XXII, No. 2, August, 1931.

This author lays great stress upon the constancy of some menstrual disorders in cases of "acute initial salpingitis." He feels that it is extremely valuable in the difficult diagnoses, admitting that the numerous clear cut cases with accentuated pathology render many diagnoses obvious.

He refers to the analysis of 500 patients with salpingitis who were operated upon in New York Hospital in which series 103 cases were erroneously diagnosed and in which 53 of these 103 were mistaken for appendicitis. This, with other statements made, goes to show the importance of careful, well taken histories and meticulous care in differentiation, pointing out that physical signs of tenderness and pain on palpation have their shortcomings, particularly where there is a generalized area of abdominal rigidity.

He points out that there invariably occurs some derangement of menstrual cycle, slight and disregarded, or definite and pronounced, depending upon the virulence of the toxicant and the severity of the reaction, "the pathognomonic differentiation between the two lesions, the absence in acute appendicitis, and the presence in acute salpingitis of a disturbed menses. This disturbance concerned with the time of occurrence, the amount of flow, and the presence of pain, is limited to the last menstrual period preceding or concomitant with the attack of lower abdominal rigidity and tenderness."

He goes on to emphasize the types of menstrual disturbances, the necessity of taking a careful previous menstrual history and asserting that disorders of the menstruation invariably precede an acute initial attack of a salpingeal origin.

Comment: It is always timely to emphasize the means for differentiation of such frequent diseases, especially where the proper treatment is so divergent. There is little doubt that a careful study of the menstrual history is an invaluable guide in proper differentiation and must be added to the investigation of any cases of either appendicitis or salpingitis in the female sex.

—Wendell Long.



**Two Years Resume of Abortions in the Louisville City Hospital.** By W. O. Johnson, M.D., F.A.C.S., Louisville, Ky. *American Journal of Obstetrics and Gynecology*, Vol. XXII, No. 5, November, 1931.

This author has analyzed 329 cases of abortion treated in the Louisville City Hospital from October 1927 to October 1929. Of these, 41 were threatened abortions for which he outlines the treatment used.

The remaining 288 were incomplete abortions. He continues by outlining the symptoms and findings on a percentage basis. The interesting part of the article is the fact that the treatment for incomplete abortion is very conservative and the results quite good. "The admission examination is made very cautiously and if there is definite evidence of complications outside of the uterus, even so slight an indication as abdominal tenderness, strict conservatism is observed, and the following treatment is directed toward the resulting complications and not the abortion."

He outlines the regime employed emphasizing that the vagina is never packed except in the rare and extreme cases of profuse bleeding and this only long enough to tide over an acute emergency. "Even if the bleeding continues and the membranes are not completely expelled, a dilatation and evacuation is not considered until the temperature has been normal for three days,

and then under the most rigid aseptic operative technic."

With this routine they have had no deaths from dilatation and evacuation and only 10% of all their cases required this procedure. He quotes a mortality of 1.4%, two deaths occurring from septicemia, and one from haemorrhage with the patient entering the hospital moribund.

He concludes by asserting that induced abortions are rapidly increasing in number and are associated with a high morbidity and numerous complications. He feels that the public should be given a fuller understanding of these facts.

—Wendell Long.

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## ROENTGENOLOGICAL ASPECT OF DUODENAL ULCER

JOHN E. HEATLEY, M.D.  
OKLAHOMA CITY

The first inch of the gastro-intestinal tract beyond the pylorus was first considered intestines by the anatomists. It is of the same origin as the stomach and may be considered part of it. Referred to as the "Bulbus Duodeni" by Holzknecht, and Cole uses the descriptive term cap, which is popular. He adopted this name because the normal duodenum should fit over the pylorus as a cap. According to Alvarez the musculature is weaker than in the remainder of the duodenum which may account partly for the stasis as we have in the stomach. Filling and emptying depend on the pylorus, peristalsis, vehicle uses for barium, and pathology involving the duodenum.

Size, shape and position of cap may vary according to: type patient, pressure from outside, adhesions, and ulcer.

Evidence of duodenal ulcer may be demonstrated on the film or the fluoroscopic screen if a constant deformity is present. These deformities may be the result of induration, spasm, and changes in the wall producing the characteristic niche. These are sometimes spoken of as the direct signs of ulcer. The induration may be expected to cause contraction of the wall according to the amount of scar. Sufficient contraction may cause obstruction. The niche is usually easily demonstrated if the patient is rotated during the examination. Different observers probably have a different conception of what constitutes a niche. It has been found in 10% of ulcers by some and 50% by others.

There is an associated spasm in a high percentage of cases which along with the

congestion and interference with arrangement of folds of mucous membrane probably accounts for the size of defect, on film, being larger than the ulcer.

Spasm may be reflex and cause confusion. Repeated examinations and sometimes antispasmodics will usually rule out reflex spasm.

Indirect signs of ulcer are:

1. Rapid emptying, due to increased peristalsis.
2. Slow emptying due to obstruction.
3. Variations in gastric peristalsis.
4. Dilatation of the stomach.

Rapid emptying may be due to malignancy of the stomach involving the pylorus, achylia, or hypermotility of the intestines.

Slow emptying may be due to polyp or growth obstructing pylorus, or adhesions.

Dilated stomach may be due to hypertrophy of the pylorus due to pylorospasm.

So we see that no one of the indirect signs alone is of very great value in diagnosis of duodenal ulcer. On the other hand very deep active peristalsis with gastric retention is considered by Carmen to be of equal value to any of the direct signs. The value of the indirect signs vary as the value of an ulcer history may vary, according to diligence and judgment.

Very often a large stomach with retention is considered evidence of carcinoma involving the pylorus. Carcinoma can be ruled out in all these cases if a constant

filling defect cannot be demonstrated immediately prepyloric.

DISCUSSION: *Dr. C. J. Fishman*, Oklahoma City:

In regards to the subject of gastric ulcer, the last word has not been said and cannot be said in two minutes. In viewing the ulcer from the different points of view, the surgical man is inclined to consider most ulcers as surgical from the point of view of treatment, the medical men are inclined to consider them as medical. It has come to the point where we are probably less in accord on the subject of ulcers than forty years ago.

*Dr. A. L. Johnson*, El Reno:

How early in life is one to suspect an ulcer?

*Dr. C. D. Blachly*, Oklahoma City:

The question of ulcer has been thrown into two schools, the surgical and medical, with probably a leaning of later years towards medical treatment. We see a very large percentage of healed scars. In the duodenum, when opened at post mortem, the duodenal ulcer is shown to be healed. This justifies us in going to extremes in medical treatment of ulcers. Fifteen percent of the ulcers that are surgical are not healed, but the fact remains that at best we will have to depend upon the medical treatment in the majority of these cases.

*Dr. C. C. Fihe*, Cincinnati, Ohio:

How early in life can you define ulcers? Ulcers have been found as early as the sixth day of life. In view of the fact that the intestinal canal is not infected so early in life, there has been much observation of the cause of the ulcer which should occur so early in life. Ulcer is not so frequently found in the first day of life, but frequently found as we go along. The occurrence of ulcer is found during the greatest period of development, then again when the forces of life are ebbing and we have some cases where the history of the patient shows an ulcer between sixteen and twenty occur again during the ages of thirty-five and forty. I think that ulcer of the stomach is found more frequently between the ages of thirty and forty according to my own personal experience.

In development of the surgical and

medical treatment of ulcer of the stomach and duodenum, we agree that ulcer of the duodenum should be treated primarily as a medical disease and there is controversy on the question whether gastric ulcers should be treated medically or surgically. The ulcer of the stomach is now being treated primarily as a medical disease. Surgery is resorted to in case medical treatment fails. The doctor must know when to stop treatment of these cases medically.

#### ACUTE ARSENIC POISONING

The apparent lack of general recognition that hair is an important channel for the excretion of arsenic, and the paucity of data in the literature on the arsenic content of hair in cases of poisoning, prompted Theodore L. Althausen and Lewis Gunther. San Francisco (Journal A. M. A., June 15, 1929), to make an investigation of this subject when an outbreak of arsenical poisoning occurred on a farm in Sonoma County, California. The outbreak of acute arsenical poisoning was traced with great probability to a container of rat exterminator in the farm cupboard. No fatalities occurred, but of seven persons originally affected five developed varying degrees of peripheral neuritis from the third to the sixth week, and one of the two remaining individuals developed laryngitis. A detailed hospital record was obtained in the most severe case, with quantitative data on the arsenic found in the hair, urine and feces before and after sodium thiosulphate administration. The outstanding facts in the literature on deposition of arsenic in the hair which attract attention to this structure are, first, that arsenic is found in the hair after single or repeated doses of it but does not appear there for at least many hours after it is found in abundance in the internal organs. At the earliest, it has been demonstrated in the hair five days after poisoning occurred. Second, the hair content of arsenic per unit of weight surpasses that of all other tissues and bodily excreta in subacute and chronic cases of poisoning with this metal, and even in cases of acute poisoning the liver is the only organ that occasionally shows a greater amount of arsenic than is contained in the hair in subacute and chronic cases. Third, hair is found to contain arsenic much longer than any structure of the body, including the liver and the skeleton. This phenomenon is accounted for by continuous deposition of arsenic in the hair from all over the body. The evidence here adduced shows that arsenic occurs in the hair in a fixed state and is not reabsorbed for excretion through other channels spontaneously or under the influence of sodium thiosulphate administration. Sodium thiosulphate therapy in their case was accompanied by a marked increase in the deposition of arsenic in the hair and its elimination through the urine and feces. In addition, almost immediate clinical improvement was observed after the administration of this drug was begun and in two weeks the patient became practically symptomless. Attention is called to the diagnostic value of white transverse bands on the finger and toe nails observed in subacute and chronic cases of arsenic poisoning and accounted for by actual deposition of arsenic in the nails.



# THE CANCER PROBLEM ✓

A. L. BLESCH, M. D.  
OKLAHOMA CITY

In attacking any problem in a rational way we must marshal the known facts concerning it and advance from this as a basis into the unknown. But the scout must always be wary. He must not let himself be fooled. The emotions are a good spur but are never a solvent and will lead us into many a blind pocket from which reason can rescue us only by coming out by the way entered. We have gotten no-where except negatively by finding but one way of the many thousand ways, *not to do it*.

What do we *know* about cancer?

1. We know it is a mass of living cells.
2. These cells differ from the body cells only in the lack of specialization. The primitive and most urgent function of all living cells is reproduction. But in the highly organized human body certain cells are specialized for the reproductive function just as other cells are set aside for other functions—thinking, digestion etc.

Reproduction to the uni-cellular (single celled) organism is a simple matter of cell division—one cell makes two cells—two cells make four cells. That is by geometrical ratio—an almost incalculable, a colossal thing.

3. The cancer cell is a reversion, a hark back to this primitive reproductive function. Just as civilization under stress drops from nations so does specialization fall away from the cell and it again obeys the primitive law, violates the acquired social law of the communities of cells making up the body and becomes anarchistic. All anarchists live on the community they infest—are parasitic.

4. Cancer is parasitic and lives on its host. Not only does it live on its host, but in living gives off deleterious poisons just as the anarchist does.

5. How does cancer spread through the body? To begin with it has no “roots,” it is *animal* not *vegetable*. With the blood vessel system every one is familiar but less so with the lymphatic circulatory system. Briefly the latter consists of minute channels which drain given areas of

lymph, converging at given points where they pass through strainers called lymph glands or nodes on their way to the central station. The cancer cells in dividing to make more cells at some time crumbles into a lymph channel, is washed along in the current until caught and held in one of these strainers (glands) where it proceeds to grow in like manner to the original growth and again extending itself in the same way. More rapidly still it may go through the blood vessel system because here there are no restraining strainers.

Cancer also spreads by infiltration of its cells into the zones about the starting point but this still is *local*, the other routes are *systemic*.

6. The cause? We cannot yet say for sure what it is that starts the body cells on its wild and lawless rampage, but persistent mild irritation is known to be an exciting factor of great importance. Those parts of the body exposed most to mechanical, chemical or physiological irritation are by far the most frequently affected.

7. In the beginning it is local and can be destroyed utterly by a competent surgeon or radiologist. The main difficulty remains still to secure this opportune time, for contrary to common belief, it is not painful in the beginning, and only becomes so when by reason of growth it encroaches or compresses or obstructs.

8. Is cancer on the increase? Perhaps—I do not know for sure. This much is true, first that means of diagnosis have improved, therefore more are found, and second, because of the prolongation of life due to medical science, more people reach the cancer age to have cancer.

The Gorgas Memorial insists that it is only through a dissemination of what we know and all we know—education of the people in-so-far as they will take education is there hope and it is in the furtherance of this very purpose that it was conceived and to this end dedicated.

To you I would say select your family physician with meticulous care and use

him to *advise* you more than to *treat* you.

#### CASE REPORTS

*Case 1.* Patient, white male, age 27, was brought to hospital so profoundly ill that an accurate history could not be obtained from the patient himself. From his wife it was learned that he had had an abdominal operation about seven years ago. His health had been good until three days before admission when he was seized with acute paroxysmal abdominal pain which was most pronounced about the navel, especially to the right in the vicinity of the incisional scar. Very little gas and no fecal matter had been passed from the time of the onset. Vomiting came on promptly and had been stercoraceous for the last twenty-four hours. In reply to the direct question as to noises in the abdomen in the beginning, she replied that they were pronounced and could be distinctly heard by bystanders.

*Examination* of this patient was hurriedly made with negative results except for the abdomen which was very distended, tympanitic and quiet.

Vomiting of immense quantities of stercoraceous material.

*Diagnosis:* Obstruction intestinal, mechanical, with complete paresis.

*Operation:* Immediate ileostomy with lysis of obstruction.

*Remarks on operation:* The obstruction was found to be a constricting band involving the terminal ileum against the anterior parietes. Intestine above this was enormously distended, below it was ribbon like. Upon release the intestinal contents gurgled thru filling the bowel below. An enterostomy was now done.

*Post-Operative Notes:* Following the operation, fecal drainage became profuse, pulse twenty-four hours later was 116, temperature 101.6.

In spite of free external fecal drainage the patient died from acute toxemia on the third post-operative day.

*General Remarks:* This case is reported unfortunately not because of its rarity, but to emphasize three things of the utmost importance in acute obstruction of the bowels.

1. *Diagnosis.* It is imperative that this be made early. This can be done and today it is almost culpable not to do so. What then are the symptoms. (a) Pain-paroxysmal in the abdomen. Paroxysms al-

most clock-like in regularity. This is due to the herculean peristaltic efforts of the bowels to overcome the obstruction. It is an early symptom and while it lasts there is still hope for the patient in operation, of course the earlier the more hope, but when it yields and is no longer in evidence the patient is almost surely doomed.

2, *Noise in the belly.* This is synchronous with the paroxysms of pain and consists in what we term a borborygmus and which the German speaks of as a *Geräusch*. Under the stethoscope it can be gotten in the very first hours of the attack and a little later as the peristalsis becomes more violent it can be heard by bystanders. With the stethoscope it will frequently end with a pop, at times almost like a pistol shot, at the point of the obstruction. When the belly becomes silent intestinal paresis has occurred and very few will recover. This may be spoken of as the dead-line in intestinal obstruction. A belly as silent as the grave means the grave for the patient in this trouble.

3. *Operation* should be prompt without regard to any other condition so-ever. The kind of operation to be done is determined by the stage of the disease. In the early cases relief of the obstruction, in the intermediate period is an enterostomy for out-side fecal drainage with or without relief of the obstruction. In the late stage an enterostomy only, the relief of the obstruction being left for a later operation.

If an enterostomy where should it be placed? More and more I am veering to a jejunostomy as the operation of choice. It drains fully as well and it leaves the operative field clear and uninfected and uncomplicated with further adhesions for the second stage.

*Case 2.* A white woman, stenographer, aged 54, consulting the clinic recently giving the following story. She first noticed what she thought was a lump in the left breast associated with a neuralgic-like pain which was worse at menstrual periods, twelve years ago. The monthly exacerbations passed with the menopause but the pain was distinctly intensified by wet weather or any weather changes.

Her mother had died of cancer of the uterus, hence her mind was filled with the dread of this disease. Otherwise her family history was negative. Also her personal history. Breasts had never func-



tioned. She had had attacks of back and joint pains.

Physical examination is negative. The left breast upon palpation showed nothing more than the ordinary glanular structure but seemed painful in flat pressure. Sliding the breast inward across the chest to the midline revealed that the pressure soreness was not in the breast at all. Pressure over the intercostal nerve at the point of pain with the breast out of the way showed the location of the pain to be in this nerve—intercostal neuralgia or neuritis.

This case is reported for the purpose of calling attention to an error that is very commonly made, that of interpreting an intercostal neuralgia as a lesion of the breast if it occurs beneath the breast. Our records show that many cases have had operations upon the breast ranging from enucleation of gland substance as a neoplasm to radical mastectomy with patient still worrying with the pain and believing that recurrence has happened.

The first thing to determine in a case of complaint of pain in a breast is to demonstrate that the pain and tenderness complained of is actually in the breast. Very often indeed it is not.

The next thing where a lump is thought to be present in a breast is to demonstrate if actually there is a lump there. It is of the greatest importance that this care should be taken.

It is not so easy at times to settle this point for the glanular structure is confusing but as a rule a neoplastic growth will move independent of the glanular structure even though originating in it. Also the glanular structure flattens out on the chest wall on flat pressure while a neoplasm stands out against the palm distinctly.

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#### MECHANICAL COMPRESSION OF SPINAL CORD BY TUMOROUS LEUKEMIC INFILTRATION

Hans H. Reese and William S. Middleton, Madison, Wis. (Journal A. M. A., Jan. 16, 1932), report two cases of mechanical compression of the spinal cord by tumorous leukemic infiltration and one case of a localized leukemic infiltration of a peripheral nerve in the lower extremities. They state that children and young adults presenting a symptom complex of paraplegic pseudoparalysis or complaining of painful conditions of the vertebral column should be examined for leukemia, the possibility of an aleukemic state being kept in mind. The paraplegias resulting from infiltrat-

ing masses of the peridural tissues do not differ from the known syndrome of spinal paraplegia. The first symptoms are persistent pain in the back, usually of sudden onset, radiating intermittently into the legs or girdle-like as in gastric crises. The lower extremities become heavy and stiff because of hypertonicity, and a spastic parietic gait is seen. The paravertebral muscles and the vertebrae are hypersensitive to pressure and percussion. This period of posterior root irritation ushers in the phase of progressive cord compression and paraparesis, segmental sensory disturbance, bladder retention and rectal incontinence, until a complete compression syndrome associated with trophic disturbances results. Rapid loss of weight, rise in temperature and severe prostration are important factors in differentiating clinically paraplegias of leukemic character from cases of cord compression due to other tumors. The initial blood pictures are not always indicative of the true illness, but soon the typical alteration and increase of blood cells makes the diagnosis certain. Spinal fluid examination with manometric studies is imperative in order to demonstrate the serologic changes and the compression syndrome. The cells of the spinal fluid should be examined in stained smears because pathologic cell forms may suggest the nature of the compressing agent.

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#### VELOCITY AND RESPONSE TO INTRAVENOUS INJECTIONS

Harold Thomas Hyman and Samuel Hirshfeld, New York (Journal A. M. A., April 11, 1931), describe the apparatus and technic of the intravenous drip. Once the intravenous drip is in operation, the clinician is in full control of the therapeutic situation, for the drip is independent of the cooperation of the patient, independent of the irritability of the stomach or rectum. There is no concern regarding absorption of the therapeutic agents; the requirements of the body for fluid, salt, dextrose and nutrition are readily taken care of without any physical strain on the patient. Trying and exacting emergencies may be managed accurately and efficiently by a single procedure rather than by a multiplicity of arduous, complicated and often ineffectual maneuvers.

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#### RARE AMINO ACIDS NOW AVAILABLE

New information on feeding problems is expected to result from the announcement that The Research Division of S. M. A. Corporation is able to supply certain rare amino acids and other protein derivatives to research physicians and others interested in research in nutrition.

Research on many nutritional problems has been held back by the scarcity and high prices of some of these amino acids which are more costly than platinum.

Moreover, these amino acids are used up and destroyed in experiments, whereas platinum may be salvaged and used again and again.

Consequently the announcement of a new source of supply should give a stimulus to food research. The Research Division of S. M. A. Corporation in making the announcement expressed the thought that the prices of these rarer chemicals may ultimately be brought within range of any research budget.

# ANEMIA—A CLINICAL LECTURE\*

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The term "anemia" means a diminution in the amount of hemoglobin, or in the number of red cells per unit of blood volume. Clinically, it is characterized by pallor, sometimes pigmentation or jaundice; shortness of breath, palpitation and arterial hypotension; headache, vertigo and tinnitus; neuralgia and paresthesias; sensitiveness to cold, muscular weakness and fatigability; drowsiness and mental depression; or insomnia and irritability; amenorrhea; anorexia and other gastrointestinal disturbances; albuminuria and edema. It occurs as a result of, or an accompaniment of hemorrhage, gross or occult, from wounds, from the mucous membranes, from the lungs and the kidneys, and into the skin; various blood dyscrasias; acute and chronic toxic processes; infections and parasitic infestations; abnormalities of metabolism, dietary deficiencies and unsanitary environment; and too often "cause undetermined."

Of 400 consecutive cases of all types admitted to the University Hospital, 110 or 27½% had appreciable anemia; 35 or 8¾% had a severe grade. But only 24 cases, or 6%, were noted by the house officers. These figures indicate the frequency of occurrence, and the ease with which it may be overlooked. In the practice of medicine few symptoms are more obvious or more important in diagnosis, and few conditions more interesting to study, and more satisfactorily treated, than anemia.

In studying anemia it is essential to bear in mind the physiology of the blood, the manner of the production of the red cells, their life history in the circulating blood, the mode of their disappearance, and the fate of the products of their dissolution.

Briefly, one recalls the following physiological facts: that the blood makes up about 5% of the body weight, and that slightly less than 50% of the blood volume is composed of red cells which contain the oxygen-carrying hemoglobin; that in the healthy individual these cells have char-

acteristics which distinguish them as mature cells, and that immature cells are exceedingly rare; that the life time of these cells is estimated at from ten to forty days; that as the cells age they undergo fragmentation, and that the fragments are dissolved, liberating the hemoglobin, which in turn is decomposed into its constituent globin and heme, the latter being transformed into bile pigment after the iron is removed and conserved. The cells thus lost to the blood are replaced by new cells produced and matured in the myeloid system which also furnishes the granulocytes and the thrombocytes.

One also recalls briefly the embryology of the erythropoietic system: the formation of the red cells in the walls of the primitive blood vessels early in the embryo, later in the liver and spleen, and towards the end of fetal life and in childhood in the long bones. In adult life during health this function is carried on in the flat spongy bones, and in the heads of the long bones. The first cells formed in embryonic life are the large nucleated cells, megaloblasts. These gradually disappear and are replaced by normoblasts, which in turn give way to the normocyte in extra-uterine life.

These processes of cell production and cell consumption are so nicely adjusted to each other that, in the adult individual living under stable conditions, exceedingly little variation in the number and quality of red cells is observed; but if this adjustment is thrown out of balance by any cause it is soon reflected in the blood picture.

The factors which serve to preserve this balance are:

1. The integrity of the vascular system.
2. The normal functioning of the erythropoietic system.
3. The preservation of the physiological rate of red cell consumption.

Anemia may result from:

1. A breach in the vascular system—hemorrhage.

\*From the Department of Clinical Medicine, University of Oklahoma School of Medicine.



2. Deficient function of the erythropoietic system — hypoplasia.
3. Increased red cell consumption disproportionate to the ability of the erythropoietic system to replenish the loss — hemolysis.
4. Combinations of these three.

#### POST HEMORRHAGIC ANEMIA

The anemia due to hemorrhage may be acute or chronic, depending on whether the hemorrhage is sudden and massive, or slow and long continued. This discussion is not concerned with acute hemorrhagic anemia except to point out that if the loss is not too great, and is promptly controlled, reproduction is rapid and is evidenced by an increased number of immature cells in the circulating blood; and in a comparatively short time a considerable loss of blood is replenished.

Anemia due to chronic slow or occult hemorrhage offers nice diagnostic problems. In the early, mild and uncomplicated cases there is nothing remarkable. Clinically, the skin and mucous membranes are pale, not icteric. Vital stain reveals a large percentage of reticulocytes, evidence of active erythropoiesis. The plasma is pale, the icteric index is low, and the Van den Bergh test for hyperbilirubinemia, both direct and indirect, is negative. If the bleeding is long continued, and particularly if from a mucous membrane, as for instance, the gastro-intestinal tract, the reproductive process may become depressed, and the picture approach that of hypoplasia. If the bleeding is from a malignant growth, as for instance, a carcinoma of the stomach, the blood picture may simulate that of a pernicious anemia.

The following case illustrates the blood picture of post-hemorrhagic anemia.

#### CASE I.

J. J., a white girl of thirteen years entered the Gynecology Service, December 5th, 1931, with a history of menorrhagia since September 7th, following her regular menstrual period. She first menstruated at the age of eleven, and has been regular until onset of present ailment. The bleeding has been constant since onset except for short intervals which she spent in bed. At the time of admission she had become very pale and weak.

1. I am indebted to Dr. John F. Kuhn, Professor of Gynecology, for permission to present this case

Examination revealed a well developed and well nourished (plump) white girl, very pale with lemon tint to skin. The mucous membranes are pale, and the sclera very white. There is tachycardia but no murmur; abdominal examination is negative; the uterus is twice normal size.

The laboratory reported hemoglobin 60%, red cells 2,250,000, reticulocytes 4.2%; leucocytes 5,800, N. 66, L. 34; Van den Bergh, direct and indirect reactions negative.

Clinically, the case fulfills the old criteria for the diagnosis of chlorosis, *namely*, "plumpness, pallor and puberty." But the blood findings are characteristic of post-hemorrhagic anemia, and not of chlorosis, which gives a relatively low hemoglobin content, and a low percentage of reticulocytes, with high red cell count.

Hemorrhage was controlled by curet-tage on December 6th, and on December 19th, she was given large doses of iron in the form of Bland's Mass with copper. December 21st the red cell count was 2,950,000; December 23rd, 3,000,000; December 26th, 3,700,000; December 30th, 4,150,000; January 6th, 4,550,000. The hemoglobin reached 78%, and the reticulocytes rose to 7%.

#### HYPOPLASTIC ANEMIA

The anemia of myeloid hypoplasia may be due to primary disease of the erythropoietic system, or secondary to severe toxemias, bacterial and chemical, to dietary deficiencies, to metabolic disturbances, to prolonged exposure to radio-active agents, and perhaps to exhaustion from the excessive demands made upon it by hemorrhage or increased cell consumption. It is frequently associated with other blood diseases, such as leukemia and thrombo-cytopenic purpura, and is a characteristic finding in the crises of pernicious anemia.

This group probably includes a greater number of cases than either of the other groups. All grades of severity are found, from the mildest secondary cases to the invariably fatal fulminating aplastic anemia. This type of anemia is characterized by reduction in number or complete disappearance from the blood stream of all immature red cells, nucleated, reticulated and polychromatophilic; frequently there is a reduction in the number of granular white cells and thrombocytes, all evidences of loss of reproductive power. There are no evidences of excessive blood destruc-

tion, and the skin, mucous membranes and sclera are white.

The following case is typical of the severe, aplastic type of this group.

#### CASE II.

O. C.,<sup>2</sup> a white seventeen year old school boy was perfectly well until seven weeks before admission to the Medical Service, April 30th, 1930, when he had an attack of "flu," characterized by malaise, slight fever and cough. He did not recover from this attack, but continued to grow weaker and become pale and dizzy, and had to go to bed four weeks before coming to the hospital. He had been looking pale for about eight months, but pallor was not marked until after this acute illness.

Physical examination revealed a well developed and fairly well nourished, extremely pale, white boy. The sclera were white. Glandular enlargement was not marked. There was a systolic murmur. Blood pressure was 130-80. Liver and spleen not enlarged. There were no other findings of importance.

On admission the laboratory reported hemoglobin 15%, red cells 740,000, no nucleated reds; white cells 2,200. N. 68, L. 32. Repeated the following, after transfusion, hemoglobin 23%, red cells 1,060,000, reticulocytes none, thrombocytes 63,000, white cells 3,400; Van den Bergh test negative. Upon repeated examinations no nucleated cells were found, and the reticulocytes varied from none to 0.1%. Fragility tests also were normal.

In spite of repeated transfusions the red cell count varied from 1,200,000 to 500,000. He ran a septic temperature throughout the course, and he died May 15, 1930. The profound intractable anemia without evidences of hemorrhage or of hemolysis, and the absence of erythropoiesis stamped this as a case of aplastic anemia.

#### HEMOLYTIC ANEMIA

This group is characterized by consumption of red cells in excess of reproduction. It may result from abnormal activity of the physiological factors, from the presence of hemolytic toxins in the blood, abnormal fragility of the red cells themselves, and hematozoon infections. The members of this group have certain characteristics in common, *namely* the icteroid discoloration of the skin and sclera, hyperbilirubinemia, and the presence of uro-

bilogen in the urine in many cases; and the evidences of active blood regeneration. In the cases associated with hemolytic jaundice there is increased fragility of the red cells. The following case is typical of the classical hemolytic anemia.

#### CASE III.

E. H. A., an eighteen year old white boy entered my service, January 4th, 1932, complaining of weakness and jaundice of eleven years' duration. At the age of seven he had a sudden onset of vomiting and pain in the upper left abdominal quadrant, and developed jaundice. The pain and jaundice have persisted, but were most severe between the ages of nine and fourteen, always worse in the spring, and each severe attack accompanied by nausea and vomiting, weakness and irritability. Up to seven years ago growth and development were normal, since then much retarded. Mentality exceedingly good. No family history of jaundice.

Physical examination reveals a poorly developed, fairly well nourished white boy apparently about thirteen years of age. His weight is eighty-nine pounds. The skin and sclera are mildly icteric; there is bradycardia. The jaws are prognathous. The genitalia infantile. The chest is negative, the abdomen negative except for marked enlargement of the spleen. Anemia is evident but moderate.

The laboratory findings are interesting: hemoglobin 50%, red cells 3,410,000, reticulocytes 18.8%, white cells 6,300, N. 60, E. 4, L. 36; slight increase in fragility of the red cells as compared with normal control, icteric index 20, Van den Bergh direct negative, indirect 13 units.

The history, the physical findings and the laboratory results stamp the case as hemolytic anemia due to hemolytic jaundice, probably acquired.

Tabulating the important findings in these three cases, we have an accurate differential diagnostic table in so far as the typical cases are concerned.

TABLE I.

	J. J.	O. C.	E. H. A.
Skin	Pale	Pale	Icteric
Sclera	Clear	Clear	Yellowish
Hemoglobin	60%	15-30%	50%
Red Blood Cells	2,250,000	740,000	3,410,000
Reticulocytes	4-7%	0-0.1%	18%
Fragility	Normal	Normal	Increased
Van den Bergh	Negative	Negative	Indirect
Spleen	Normal	(?)	Enlarged
Liver	Normal	Normal	Enlarged?
History	Hemorrhage	Infection	Jaundice
Type of Anemia	Hemorrhagic	Aplastic	Hemolytic

2. From the service of Dr. A. B. Chase, Professor of Clinical Medicine.



Unfortunately not every case of anemia can be placed in its proper niche so easily; this is especially true if the history is obscure, and if one has not the opportunity to follow the case from the beginning. This is illustrated by the following case which is being studied at this time.

#### CASE IV.

J. C., 22, white male, entered Surgical Service, December 25, 1931. For the past six months he has had intermittent pain in the region of the last lower right molar which he took to be due to the eruption of the tooth. The pain would last for two or three days with freedom from pain for several weeks. Two weeks previous to admission a swelling the size of a hazel nut appeared at the angle of the jaw, and a gray membrane grew out from the cheek over the tongue. This membrane was removed by a doctor five days later, without hemorrhage. The lump appeared to shift forward and has been painful since, and has been associated with fever up to 102. He has lost twenty pounds in the last six weeks.

Physical examination reveals a young white man, very pale, with right jaw uniformly swollen. There is a hard mass above the angle of the jaw, hot and tender. Inside, on the buccal surface is a ridge of necrotic tissue. On the right anterior pillar is a shallow punched out ulcer, and a smaller one at the area of the last molar. The skin, mucous membranes and sclera are pale. No other abnormal findings. The provisional diagnosis was Vincent's infection. Biopsy was done and there was small hemorrhage, and slight blood losses several times. The dentist reported that in his opinion this was neither a Vincent's infection nor a malignancy.

Upon admission he had a temperature of 102, which gradually subsided to normal on the sixth day, and he has had an occasional rise to 99, and once to 100 since.

The urine has been negative except for a trace of albumin. The smears from the ulcers showed a few spirilla and a few fusiform organisms. The pathologist reported the biopsy specimen suggestive of malignancy. The blood findings are tabulated below.

TABLE II.

Date	Hb.	R. B. C.	Reticulo- cyte	Thrombo- cyte	W. B. C.	H.	T.	L.	Immature
Dec. 27	50%	1,500,000			20,000	32	68	*	
Dec. 28	60%	2,050,000							
Dec. 31					7,100	34	66		
Jan. 1					7,700	20	6	74	

\*The neutrophils were reported as being immature forms.

Van den Bergh test negative, both direct and indirect reactions.

Fragility test normal.

This case is more difficult to analyze. It is unfortunate that the original blood studies are incomplete. It appears evident, however, that some severe toxin having a depressing effect upon the myeloid functions is operative. This is evidenced by the rapid fall in the white count with a marked reduction in the percentage of granular cells. Later counts also reveal a marked depression in the number of thrombocytes. With these findings and the history of no hemorrhages sufficient to cause the severe grade of anemia present, and with no evidence of excessive blood consumption, one is led to believe this a case of hypoplastic anemia. It will be interesting to watch the outcome, and the case will be presented again.

In this discussion I have made no mention of those methods important to the clinical hematologist but difficult for the man in general practice, *namely*, measurement of the red cells, estimation of cell volume, iron content of whole blood, etc. The tests I have stressed each of you should be equipped to perform in your office.

Perhaps I should say one word about pernicious anemia, as one must always consider this disease in differential diagnosis. If one keeps in mind the age period in which this condition occurs, *namely*, middle life, the history of stomatitis and glossitis and the smooth glossy tongue, the achlorhydria, the hemolytic type of anemia, the evidences of myeloid dysfunction, rather than hypo-function (presence of macrocytes and megaloblasts), the high color index, and the symptoms of spinal cord involvement, the diagnosis is simplified somewhat. The remarkable response of pernicious anemia to liver therapy is also of diagnostic importance.

#### TREATMENT

1. *Hemorrhagic anemia*: Control of the hemorrhage is essential. Because of gross

loss of blood and consequently of iron, iron therapy produces most satisfactory results in this type of anemia. It should be administered in adequate dosage. Liver therapy should not be omitted, especially in cases of long standing which may be approaching a hypoplastic stage.

2. *Hemolytic anemia*: Treatment of underlying cause, as for instance, quinine therapy in malaria, splenectomy in familial or acquired hemolytic jaundice.

3. *Hypoplastic anemia*: Iron and liver therapy should be given. In the acute aplastic cases no treatment may avail. Transfusion is the treatment of choice in the hope that the patient may be carried over a crisis and the myeloid system have an opportunity to recuperate and perhaps become active, after which recovery may be prompt.

#### SUMMARY

Three cases are reported, illustrating the typical findings in the three types of anemia.

1. *Post-hemorrhagic anemia*: Pallor, pale sclera, low red cell count, low hemoglobin, high reticulocyte, negative Van den Bergh, and history of hemorrhage.

2. *Hypoplastic (Aplastic) anemia*: Pallor, pale sclera, low red cell count, low hemoglobin, absent or low reticulocyte count, negative Van den Bergh, fever, history of infection.

3. *Hemolytic anemia*: Pallor and icteroid color of skin, yellowish sclera, moderate to low red cell count and hemoglobin, very high reticulocyte count, positive indirect Van den Bergh and increased icteric index.

A fourth case is given, showing some of the difficulties in diagnosis. Treatment of these three types of anemia is discussed briefly.

#### CARBARSONE IN TREATMENT OF AMEBIASIS

According to A. C. Reed, H. H. Anderson, N. A. David and C. D. Leake, San Francisco (Journal A. M. A., Jan. 16, 1932), the drugs so far suggested for the therapy of amebiasis may be classified as follows: (a) alkaloids, such as those of ipecac or kurchi; (b) oxyquinoline derivatives, such as chiniofon ("yatren"); (c) organic arsenicals, such as acetarson ( "stovarsol"), and (d) miscellaneous antiseptics and astringents, such as the alkyl resorcinols and bismuth compounds. These types of amebicidal agents have been critically evaluated on the basis both of laboratory and of clinical studies. Emetine, the most commonly used drug in amebiasis, is only partially effective in

doses which too often are dangerous, especially to the heart, and there seems to be little hope of finding among the ipecac alkaloids a drug meeting the requirements for satisfactory therapy in this disease. The kurchi alkaloids have little if any useful effectiveness. Critical data are not yet available to judge properly of the value of the alkyl resorcinols, although they are interesting. It is indicated that more satisfactory amebicides are to be found among the oxyquinoline derivatives than chiniofon, the only one so far exploited, but since systematic investigation of this group has scarcely begun, conclusions cannot be drawn at the present. Certainly chiniofon has not been as successful as was hoped it would be. Of the organic arsenicals, only acetarson has been much used in amebiasis, but experience shows that it is only slightly effective and then at doses too often dangerous. With rigorous but arbitrary clinical criteria of "cure," the authors treated forty unselected amebiasis patients with a high degree of success by "carbarsone," a drug, 4-carbamino-phenyl arsonic acid, containing 28.8 per cent of arsenic. The recommended dosage is 75 mg. per kilogram in divided amounts over a ten day period, since the arsenic in the compound seems rather slowly absorbed and eliminated after oral administration. Practically, this dosage amounts in the average adult to 0.25 Gm. twice daily for ten days, given in gelatin capsules by mouth. It should not be used in amebic hepatitis, or in amounts which might cause symptoms of arsenic toxicity. More closely than any other drug now exploited does carbarsone meet the requirements of an ideal antiamebic agent. It is clinically nontoxic in effective doses; it may conveniently be administered orally without interference with the patient's usual routine; it has no untoward side actions, and it is comparatively cheap. There is no evidence as yet that it may be of prophylactic value.

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For other details of the Mead Johnson Vitamin A Clinical Research Award, see special announcement, pages 14 and 15, in Journal of the A. M. A., January 30, 1932.



# GALL STONE ILEUS

C. S. NEER, M.D.

VINITA

The surgery of the biliary tract is replete with striking and unexpected phenomena. A patient with symptoms of common duct stone surprised us by coughing up quantities of bile and a little later after the stone had been removed he demonstrated too well the patency of the common duct by showing most of the liquid food taken into his stomach promptly appearing in the bottle into which the common duct catheter drained.

Gall stones have been known to wander in very devious paths. They have been extruded through the abdominal wall and have in some cases ulcerated into the stomach and been vomited up. They have even entered the urinary bladder and been passed through the urethra. This may occur by direct perforation of an abscess into the bladder and Courvoisier reports seven cases of urinary fistula associated with gall stones. In a case of Elsner's<sup>1</sup> post mortem disclosed a fistulous tract leading from the gall bladder to a perinephritic abscess which extended to the right kidney where a stone was found, one having passed by the ureter to the bladder and out.

Obstruction of the bowel by gall stones is one among the many dangers of gall stone disease which, though infrequently met with, nevertheless, occurs often enough to give it a real surgical interest. That it is somewhat rare may be judged by the fact that Mayo-Robson<sup>2</sup> found in the four largest hospitals of the united kingdom for a period of one year in the 80,000 patients but four cases of obstruction due to gall stones. Frank Martin<sup>3</sup> received replies from 28 prominent surgeons and from this number was able to collect but 16 cases, 11 of which died.

## CASE REPORT

B. H. L., male, age 48, was brought to the hospital on the morning of October 4th, 1930. About four years ago patient had an attack of abdominal pain diagnosed cholecystitis. It was of short duration and patient had been in good health since.

The present attack began three days before admission with pain in the upper abdomen. Dr. K. D. Jennings, who saw the

patient considered it a somewhat atypical gall stone attack. On entering the hospital the temperature was 97.8, pulse 100, and respiration 28. The abdomen was distended with gas and he was having constant moderate pain which was referred to the mid portion of the abdomen. There was no localized tenderness. An hour after admission he vomited a large amount of green fluid. A fourth grain of morphine was given for pain hyperdermically. Enemas were given every few hours and very good results obtained each time. Patient gradually became more comfortable and there was no more vomiting for three days. The abdomen continued distended with gas but the temperature continued about 98.5 and the pulse from 72 to 88. The urine was negative and the white blood count was 10,000. On the afternoon of the fourth day he began to feel worse. The last enema had been followed by a good bowel movement but he complained of pain in the abdomen which was of different character than that which he had on admission. The pain was now of a crampy intermittent type suggestive of intestinal obstruction. One or two other enemas were given and the solution returned colored slightly but with no relief of pain. We decided to open the abdomen. A low median incision was made. Considerable fluid was found in the peritoneal cavity and this together with the greatly distended coils of intestine confirmed the diagnosis of obstruction.

The greater part of the ileum was completely empty. On following up the empty intestine the obstruction was found due to a large gall stone in the upper ileum. The loop containing the stone was brought out of the wound, opened along the anti-mesenteric border and the stone measuring  $2\frac{1}{2} \times 5$  cm. was removed. The opening was closed except for space enough to introduce a catheter for a Witzel enterostomy. Patient died two days later.

Murphy<sup>4</sup> who contributed much to the study of gall stone ileus divided the subject into two periods. The first which precedes the epoch-making paper of Courvoisier<sup>5</sup> in 1890, and the second from 1890 until the present time. Courvoisier will

be best remembered by the important law bearing his name which briefly stated is, "When the common duct is obstructed by the stone dilatation of the gall bladder is rare; when the common duct is obstructed by cancerous growth dilatation of the gall bladder is common."

Many reports of cases of gall stone ileus are found in the literature, an article by Frank Martin appearing in 1912 is especially noteworthy, giving a comprehensive review of the subject and a report of three cases.

To produce obstruction in a small intestine the stone must of course be of considerable size, probably over 2 cm. in diameter. In the colon a much larger stone would pass.

#### HOW DOES THE STONE ENTER THE INTESTINE?

It is unusual to find the dilated common duct with a diameter greater than one cm. and the cysticus is considerably smaller. Therefore it would seem to be impossible for a stone large enough to cause obstruction to pass through the ducts without ulceration or pressure necrosis. Without going into the evidence upon which the statement is based, it may be said that stones large enough to produce obstruction do not as a rule find their way into the intestine by the natural passage. The patient frequently gives no history of gall stone disease and this is probably due to the fact that the type of stone that is most likely to subsequently become impacted in the intestine is the large single stone which nearly fills the gall bladder and does not move and may not therefore give typical biliary colic. Post mortem researches by Courvoisier and others have shown that the common method by which the stone enters the intestine is by ulceration through the gall bladder wall directly into the duodenum. Out of 31 fatal cases studied by Courvoisier 28 were of this type. In two gall bladder-colon perforation had occurred. One showed a fistula between the gall bladder and the ileum.

A number of cases have occurred in which stones have ulcerated from the gall bladder into the stomach and been vomited up.

It seems obvious also that another possibility is that the stone may perforate into the abdominal cavity or into a small part of it walled off by inflammation and subsequently find its way into the intestine

by necrosis, as instruments, sponges and other foreign bodies left in the abdomen have been known to do.

#### DIFFERENTIAL DIAGNOSIS

Diagnosis of gall stone ileus cannot often be made with certainty. Given an elderly patient with a past history suggestive of cholecystitis and presenting a somewhat indefinite abdominal pain with perhaps some intervals of temporary improvement but gradually taking on the character of partial or complete intestinal obstruction, and we may consider it as a reasonable possibility. In quite a number of the reported cases no history of previous gall bladder trouble is obtainable. So many acute conditions in the abdomen have to be considered such as obstruction in the ureter, pancreatitis, and peritonitis from its various causes, that the best we may hope to do is to recognize as early as possible that there are obstructive symptoms and without waste of time in speculation as to the cause, give surgical aid.

#### TREATMENT

Early surgical relief is as imperative in this form of intestinal obstruction as in any other. The surgeon is in more danger of being misled by the passage of gas and even of bowel movements after a high degree of obstruction has occurred, than in cases of obstruction with more sudden onset. The incision in the bowel for removal of the stone is usually made in the long axis on the antimesenteric border. J. S. Brown<sup>6</sup> advocated a cross incision believing that this produced less narrowing of the bowel and disturbed the circular muscle fibres less.

The question of emptying the distended portion of the bowel before closing it or of doing some form of enterostomy is one to be decided by the surgeon although it must be noticeable to anyone looking over case reports of these operations that in many of the successful ones this was done.

The mortality is high. Martin found it to be 69%.

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# GERIATRICS\*

J. T. MARTIN, A.M., M.D., F.A.C.P.  
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"Geriatrics, derived from Greek *geron*, an old man, and *iatrike*, medical treatment; that branch of medical science which treats of the aged in their physiological and pathological relations; the specialty of the diseases of old age." (Stedman, 1928).

Medicine and its allied sciences have done much to mitigate woe, alleviate suffering and save life. Lest ruining pride fill our breasts, it is well to remember that all these accomplishments have been limited to, (1) a few common infections, (2) to disease of female pelvis and, (3) especially to diseases of children. The disease of post adult life have not receded in their death toll and the grief they cause has been assuaged but little. The profession by its efforts and the layman by financing the effort are now pushing forward in research in this field.

Sociology or social science, daily rubs elbows with the medical profession. The pioneering of the one, reflects upon the other. The activities of social workers fifty years ago resulted in the poor house. An advancing consciousness of social responsibility evolved the poor farm. It has been long known that this agency was not the proper one, and the old age pension idea is with us.

It will be expected that medical science and medical practitioners will be in step with this advance. So perhaps a few passing thoughts on this subject will not be too boring. It is not my intention to advocate that a distinct specialty be set apart as it were from all the rest, but rather as a distinct study for all. Within a generation now active in the profession, pediatrics was conceived and born as a specialty and what a lusty youngster it has proven itself. So while history may repeat itself with Geriatrics, such pleas or prophecies are not germane to the paper.

Dr. Jacobi, father of pediatrics, writing an introduction of Dr. Thewlis' book says, "A '*malum coxae senile*' may not mean exactly the seventh or the fifth or the fourth decade." Age may reach a

man in earlier years or in retarded periods. Some of us may have been of the opinion that we have been quite too generous in giving consideration to real or alleged specialties, for instance, disease of infants and children but there is no doubt that certain parts of the maladies of advanced age have not been taught or studied to their full merit." It is to emphasize these words of Dr. Jacobi that inspired this paper.

Dr. Seidel's monograph "Disease of Old Age" was really the beginning of American Geriatric literature. He states mistakes are made daily in the treatment of the aged and the normal mortality of advanced life is considerably increased as a result of hitherto neglected study of the peculiarities of the senile organism. Charcot's lectures of 1860, and Loomis' addenda to the same, was followed by Fothergill's—a layman's view—*Diseases of Sedentary and Advanced Life* (1885). Dr. I. L. Nascher, New York, asked a Vienna physician about physical care of a home for the aged which was under his care and received the reply, "We deal with the aged inmates or the aged person just as the pediatricist deals with children," and Dr. Nascher remarks that this gave him the basic principle of Geriatrics; *viz*: "Senility is a physiologic entity like childhood, not a pathologic state of maturity." Dr. Thewlis in the introduction to his monograph, "Geriatrics," states that at a meeting of New York Geriatrics Society the surgical aspect of the aged was discussed and the surgeons present limited it to cases over seventy years of age. "This," he continued "is the general impression but it is erroneous. The subject may apply to those of thirty; Geriatrics includes, not only the treatment of the senile diseases, but also the care of the aged, the cause of ageing, and the measures for prolonging life."

The fundamental principles upon which Geriatrics is based are:

1. The senility is a physiological entity like childhood and not a pathological state of maturity.
2. That disease in senility is a path-

\*Read before Oklahoma City Academy of Medicine.

ological condition of a normally degenerating organ or tissue and not a disease such as we find in maturity complicated by degenerations.

3. That the object of treatment in senility should be the return of the disease organ or tissue to the normal of senility, not the restoration to a condition normal in maturity.

All students of the subject concede these essential and independent principles. In Dr. Nascher's classification the Geriatric diseases are divided in five groups:

1. Primary senile diseases.
2. Secondary senile diseases.
3. Preferential diseases of old age.
4. Modified diseases of age.
5. Diseases uninfluenced or rare in aged people.

In first group are defects in the normal senile processes or functions, as cerebral arteriosclerosis. In second group are diseases or accidents dependent on group one; as ruptures of the same sclerosed cerebral arteries. Group three, preferential diseases of the elderly, include those that usually appear in this period of life, as paralysis agitans, diabetes, gout, etc. Group four, modified diseases, include most of the infectious and the fifth group those rare in this period of life. The treatment of these groups involve modifications of the treatment of the mature, for the action of therapeutical agents of all kinds physical, thermal, chemical or biological vary from that normal to the other periods of life.

The fundamental change of senility is the loss of resiliency. This occurs in muscles, in bones, in vascular system, in metabolism, in special senses. Degeneration first shows itself in early thirties *e. g.*, the athlete's waning time, but personal egotism often inspires the man of forty-five to sixty to boast of athletic prowess. He is a couple of decades out of line.

The senile eye, so the ophthalmologist tells us, begins on or about our fortieth birthday. Even our friends of the nether region, the urologists, confirm the ophthalmologist by citing the prostate of forty-five. Cardiologists are kinder and allow the fifth decade before registering the resilient loss in their department. Thus the process is gentle, like a kindly nature always is, but inevitably progressive.

Growing old gracefully is indeed an art

and well worthy of the attention of everyone. To do this the physical needs should be provided. First is comfort, that is the freedom from the minor annoyances of life, the petty struggles and strifes that are part and parcel of the daily life of a mature man in the fight of existence. Our system of civilization makes this possible to each prudent man.

The beauties of leisure, as distinguished from idleness, are appreciated more by the elderly and can by their fund of experiences be most valuable to civilization and can add to the happiness and longevity of older people.

With the passing years habits change, though modes of life may not. Eating and drinking habits especially are modified. Moderation is the natural rule. Lessened metabolic demand lessens the appetite. Mild alcoholic beverages are well tolerated both as food and tonic. Remember the old time saying, "Wine is the milk of the aged."

Travel is to all a pleasure, but to those who have fought the battle, other battle fields are treasure houses to be enjoyed as only veterans may.

Work all must, who can, to be happy, but the type most suited changes. Useful industry, and purposeful work that does not compel is the ideal sought. Hence, get a hobby and ride it.

The money needs of old age are different from those of the competitive era of life. Ideals in this matter each should determine for himself and labor to obtain.

The investment of money to give greatest freedom from care and worry of handling is to be desired. It is here life annuities in well established life insurance companies perform a valuable function. Indeed statistics show annuitants do live longer.

The highest of the art of growing old gracefully is in the interior or mental part of man. It is here companionship is mostly prized. The old cronies, the "Darby and Joans" are happy pictures. Firestone, Edison and Ford get and give us a thrill. And we want old friends, not new ones in age. The greatest regret of one of our leading citizens on leaving Oklahoma City to retire, was that he was too old to make new friends and try them so that he could enjoy them. This is a grievous reason



against changing habitat when high activity ceases.

An occupation fitted to our powers that does not task or strain the organism gives pleasure in the doing. To visualize these things I have divided the life of man into three ages:

1. Age of acquiring.
2. Age of creation.
3. Age of judgment.

The age of acquiring is from birth through adolescence, a time of getting experiences, ideas, education, concepts, and physical development. An age in which old folks tolerate much, and wish well.

Second, an age of creation extending from adolescence to climacterium is characterized by ambition to establish families, dynasties, to create industries, fortunes, and reputations; an age to make of ideas already acquired a new one, the age of invention; a driving age where ambition rides a ruthless spur and fortune's smile is reward sufficient.

The age of judgment, the last, when life's precious experiences are better valued and the ripeness of time has given a richer insight of life; a glorious age to those who fear it not and are prepared.

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#### PRESENT STATUS OF LIGHT THERAPY: SCIENTIFIC AND PRACTICAL ASPECTS

Edgar Mayer, Saranac Lake, N. Y. (Journal A. M. A., Jan. 16, 1932), states that although there is much information concerning results of irradiating man and animals, explanations and indisputable generalizations are sadly lacking. When it is realized that even in photochemical reactions the physical process is not completely understood, the difficulty of explanation in biology and clinical medicine becomes more evident. No single explanatory hypothesis for the results ascribed to light action can yet be formulated, as there is great need of data obtained under definitely controlled conditions of dosage, intensity and wave lengths in normal and in abnormal organisms. There is a lack of agreement between the practical and therapeutic results and the scientific and experimental observations. Experiments have been carried out for the most part on healthy men and animals, whereas usually the practical results have been obtained on the sick. The abnormal organism is much more sensitive. Diseased tissue may vary from normal in sensitivity to radiation. The animal skin is not perhaps comparable to the same organ in man (as, for example, in exposing shaved guinea-pigs to sunlight, it is most difficult to produce erythema). In many reports the importance of sky radiation has been ignored, whereas it is possible that the beneficial effects of sunlight are in a great measure due to its luminous and infra-red portions. The Sun, with its accompanying factors of environment, can hardly be compared to

artificial sources of light. The exact physiologic effects of light or of the air bath alone are not clearly understood, nor is the effect of light on single cells. In application, dosage has been difficult to control, and marked variation in the affects comes from a small stimulative or a larger destructive dose of light. Similarly, the technic of application with most workers has been different. Published experiments lack specific details in many instances, especially those pertaining to the spectrum, such as its limits and the distribution and the character of the radiant energy employed. These must be defined accurately instead of attributing results merely to "ultraviolet energy." Perhaps this is the cause of the contradictory nature of many of the results published. Controversies constantly take place between the proponents of the use of sunlight and those of artificial sources. The value of sunlight for one form of disease against another, for instance pulmonary tuberculosis as against the extra pulmonary forms, is a subject for debate. The advantages of different artificial sources of energy are still open questions. The workers in high altitudes are still enthusiastic in expounding their clinical results in contrast to those in the lowlands. This difference of opinion appears in part due to the fact that, in the development of the use of light for disease, only empiric results were known for many years before accepted laboratory evidence was produced which placed light therapy on a scientific basis. The author emphasizes the fact that harm may be done by the injudicious and uninformed use of light. Valuable as this method has proved itself to be in a limited number of diseases, it is surely clear that much more investigation and many more scientific data are required before light should be generally prescribed by those unfamiliar with the contraindications and the details of its application.

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#### PATHOLOGY AND TREATMENT OF CORNEAL ULCERS

Oscar B. Nugent, Chicago (Journal A. M. A., Jan. 16, 1932), prefaces his discussion of the pathology and treatment of corneal ulcers with a brief review of the history of five layers of cornea. The surface corneal epithelium is quite resistant to germ invasion, but, when infection passes the surface cells of the cornea, less resistance is encountered in the basement epithelial cells. Bowman's membrane becomes thinner and readily disappears under the influence of active germ invasion, thus offering little resistance to its progress. The potential lymph spaces of the corneal stroma rapidly fill with inactive or dead leukocytes and fibrous exudate, blocking the progress of repair and inviting further necrosis. Descemet's membrane becomes thicker under the influence of inflammation and is most resistant to the process of necrosis. Corneal necrosis is mostly due, either directly or indirectly, to bacterial invasion. Ultraviolet irradiation is made more efficient because of the transparency of the cornea, which offers little resistance to the entrance of the ray. Sterilization of the necrotic and perinecrotic area is most efficiently accomplished by the Birch-Hirschfeld carbon arc lamp, and regeneration of new epithelial cells to cover the area is quite rapid. Scar formation is greatly reduced, and the resulting scar is thinner, as the result of rapid filling with epithelium, which, in a measure, prevents scar formation.

# THE EXAMINATION OF THE UROLOGIC PATIENT

ALFRED R. SUGG, M.D.

ADA

This dissertation and the suggestions outlined are not intended as a *sine qua non* of urologic examination. It would not fit a large clinic of super specialists. It is with some temerity that I present it at all, seeing that there are some experienced urologists here, and if to these my remarks are trite, I can only add that I am especially speaking to my neighbors in the small towns of southern Oklahoma, who are confronted daily with the very practical problems of a very practical section of the medical art. I am making no attempt to review the literature or to back up my statements by any large series of cases but simply relate what I have found to be of value in my practice. I do not believe it has been sufficiently impressed on the profession, at least not in a way to be effective, the immense help that a properly performed urological examination can be and since there are no men in our whole district confining themselves entirely to urology it behooves us to do as much as can be done acceptably, and at least to be able to intelligently interpret our findings and to know when special advice should be sought or expert examinations called for. It has been said that every specialist becomes obsessed with his specialty, the surgeon can only see something to be amputated, or repaired, or the tuberculographer is inclined to see tuberculosis in every pathology, the cancer quack sees malignancy (or money) in every wart, and the syphilographer sees the spirochete weaving its spiral way through all disease, most of all the psychiatrist has to fight the obsession so common to them that every soul has a mind on the verge of becoming abnormal. I have a sneaking suspicion that the family doctor has the urologist in the same category. It may be that his suspicions are well founded. I have in mind a remark made by a reputable and successful physician of our district last year to the effect that he did not care to hear a urological paper but that he wanted something practical. It is with the hope that I may focus our attention upon the practical

value of urological examination that I proceed.

1. I believe the most important single factor in successful examination is system. A place for everything and everything in its place. Work out a satisfactory routine and adhere to it until it becomes automatic. Even the average plowboy is more systematic than the average physician. He does lay off his land, and whittles away at it until it is done and when he is through he knows he is through and that no land has been plowed twice. I once owned a small dog that would hunt vigorously, dashing hither and yon, and would return presently with his tongue out and wearing a facial expression that said plainly, 'I am about the best hunter yet.' His only trouble was that he never found anything, and I'm sure the reason that his good intentions never bore fruit was because he apparently never knew what he was hunting, *ie.*, did not make a systematic search. The memory of that pup reminds me of the most of us as physicians. In our hurry to impress the patient with our superior wisdom, or in a rush to get into the golf knickers, we begin running in a circle and all too often we return with our tongues out (wagging alibis) and wondering where the patient went. I am reminded of the admonition given a colleague of mine by an old neighbor upon his entering medical school as follows, "Now we got plenty of treatment doctors, but what I want you to make is a diagnosis doctor." The wisdom of this remark is obvious, even to the laity and to the profession it is painfully and forcefully brought home almost daily. It is likewise true that a large portion of our diagnostic errors are due to hasty, incomplete, and improper examinations. This statement I think holds true in any field of medicine, and it is especially true in the field of urology. Attention to detail is the ladder by which the physician, who so aspires, must climb if he would live up to so lofty an ideal as the old man outlined for the student doctor. There is no find-



ing in the urological field of small significance and many of our failures are directly chargeable to the fact that after having found a clue we dismiss it as of not sufficient significance to merit a careful study. One celebrity has remarked that "genius is the capacity for taking pains" and while there is little likelihood of any of us blooming out into a full fledged genius there is room south of the Rock Island railroad and north of Red river for a whole flock of little genii who understand the bigness of little things as applied to urology.

A young man came recently to see me whose only complaint was a tenderness on pressure in the right side of scrotum. He had consulted a doctor who dismissed him with a shrug of the shoulders, and with the suggestion that a slight bruise had caused it. The soreness was caused by a tubercular nodule in the epididymis and further examination revealed very definite early pulmonary tuberculosis.

Another detail (or little thing) of great importance that is frequently overlooked is the careful cleansing of the urethra before any instrumentation, as well of course as to really sterilize all instruments. Those that cannot be boiled can be satisfactorily treated with 1:1000 oxycyanide of mercury.

I think the chill following instrumentation is more often due to the infection than to the trauma.

I have in mind a case recently who applied to as many as four doctors and two hospitals for relief from her illness. She had the following diagnosis: cystitis, psychoneurosis, retroversion, and malignancy of uterus. Her chief symptom was dysuria. The urine was constantly normal except for the few tell tale microscopic red blood cells. Cystoscopic and cystogram examination showed an inoperable cancer of the bladder from which she shortly died.

I know a man, while apparently in good health, had shown macroscopic blood in his urine for one and one-half years before he or his physician sought a more accurate diagnosis than "kidney trouble." His carcinoma of the bladder likewise proved fatal.

The sight of blood in any amount in any urological examination ought to be the "red flag in the bull's face," challenging us not to even hesitate until its source is accurately determined. Pus cells are of but slightly less importance and I mention these here to emphasize the importance of fol-

lowing up a clue once it has been found. The corollary of this is to check your findings and as Andy would say "double check." This is especially true in radiographic work of the urinary system, and cystoscopic observations. But I remember also a clever rascal in the urologic ward who had excruciating attacks of renal colic, at which time he would pass fragments of stone and varying quantities of blood. Becoming suspicious I appointed myself a Sherlock Holmes, and watched him insert a hunk of plaster into the urethra at such times as his craving for one of my ever present hypos needed attention.

A shadow can be anything from a spot on a cassette to a calcified gland, and the trouble with these infernal spots is that they out-Herod Herod. They look much more like a stone than a stone does. Furthermore one does not have to be on more than speaking terms with Hunner's ulcer to know something of "elusive" pathology in the bladder. Everything from localized trauma to the air bubble is susceptible of interpretation as pathology. Though with a clean, properly distended bladder, a dark room, and a modern observation scope none but the merest tyro need be misled, and especially if one charts his findings and finds it on subsequent examinations.

We hear rumblings of a more or less constant warfare between the ureteral stricture school and those of the anti-stricture party. Much confusion would cease to exist here if the proponents would "double check" their findings more closely. No doubt many spastic contractions of the ureter with apparent dilatation above have been miscalled inflammatory strictures, but if on one or two or three subsequent examinations the ureterogram is identical I feel safe in assuming it is not a coincidence and that stricture is the diagnosis. I think it is axiomatic that no man should attempt to diagnose disease so freighted with possibilities of danger who is not proficient not only in the use of the common tools of the profession, but also he must possess and be fairly adept with the special instruments the use of which has brought our branch of medicine to become a specialty.

The anatomy involved makes the preparation of the patient more difficult while the unreasoning false modesty, and the distinct tendency to down right lying about most obvious facts, makes the his-

tory unreliable and puts the whole burden of the diagnosis upon the physician. The individual doctor will succeed in making a correct diagnosis in direct proportion to the completeness of his armamentarium, his systematic routine, and his ability to take infinite pains.

The patient of either sex must be exposed for the examination, and I am not in sympathy with the great amount of fussy technique, which enables us to look at them while making them think we are not. They do not appreciate any game of peek-a-boo. They come to us for an examination and are disappointed if they do not get it. I don't believe we should accept female patients unless we have a trained female assistant and then simply ask to have the patient prepared and proceed to examine her. False modesty and correct diagnosis are eternal enemies. A vastly more important phase of the examination that they do appreciate, both men and women, is gentleness in manipulation and especially is this true in passing sounds, cystoscopes, etc. In the first place as few instruments as is consistent with good work should be used and these except rarely during any acute disease. I think not enough attention is paid to rendering these examinations painless, and this seems to be considered less important the larger the medical center or clinic. I asked a world famous urologist once how he would define "local anesthetic." He promptly replied that it was an anesthetic which enabled his assistants to hold the patient on the table. They will endure the tortures of the damned at these famous clinics, but they simply will not stay with me if I hurt them. This fact maybe, rather than any claim to humanitarian impulses, has prompted me to give some extra time to this phase of my work.

I want to submit my method of reducing pain to a minimum in urologic work, and I can recommend it as satisfactory. In the urethra and bladder I use 4% alypin to the exclusion of all other drugs, I find novocain and butyn ineffective and I am afraid of cocain. I have used alypin for five years almost daily and using from 2 to 5 c.c. in all kinds of cases, I have never had a semblance of a reaction. If you give it a little time it makes friends for you. Caudal anesthetic is very effective though it is bothersome as an office procedure, even though one has satisfactory facilities. Avertin by rectum is an anesthetic I use where it is desirable to have complete narcosis. I use this especially in old men. I have

never been scared by its rather frequent use. With plenty of assistance for work of short duration but in which pain is severe as in fulgurating small areas in the bladder I find gas-oxygen very satisfactory and I keep a portable machine in the cystoscopic room.

I think the family doctor (I dislike the term general practitioner) should take at least one phase of urological examination more seriously than is done. I refer to the routine, laboratory tests. Of course they are performed daily by all of us, but it is my best guess that many times they are done in a perfunctory manner and are not repeated for comparison often enough. To name only the ones I use in daily practice and find invaluable, I would mention the usual urinalysis, cultures, stained smears, function tests (P. S. P.) Blood chemistry (N. P. N.) Guinea pig inoculation and dark field examination. These are easy to do, the equipment is inexpensive and much can be gained by their frequent use. Of course if one has a good laboratory near, use it, but just remember that with comparatively little effort they can be utilized by any of you. The dark field illuminator is especially valuable and though I have only a few cases where it is servicable I would not attempt to practice without it. It is nothing short of criminal to pass a venereal sore as non specific without this test repeatedly done. To make a snapshot diagnosis and begin a long, expensive and dangerous series of treatments is not much better, while almost as bad as either is to tell the patient to wait six weeks and take a Wassermann to see if he has syphilis. If you are not prepared, nothing short of dishonor can attach to your practice unless you call a consultant who can make the examination for you.

There is much more information to be gained from the urinalysis than is customarily procured from it. I have found the routine use of the two glass test of much value. Of course this does not locate the origin of the pus as between bladder, ureter or kidney but it does tell you if the lesion is inside or outside the sphincter.

I use the P.S.P. test and concentration test for function and they both give valuable information though as stated above they should be checked. Much misinformation can be acquired by assuming that a kidney is not functioning because dye appears late, or in small amounts. The position of the eye and other causes greatly in-



fluence it. The Hench-Aldridge method of blood urea determination is easy, rapid, accurate, and is extremely valuable as a routine in all sorts of cases, urologic and otherwise. It is much less formidable than the Kjeldahl experiment which many received as an introduction to physiological chemistry in medical school, and is a thoroughly practical procedure in any office. Of course it is not automatic. Anyone can keep a few guinea pigs and if you have searched in vain for the tubercle bacillus, 20 cc. of urine into his peritoneal cavity may be of great assistance.

An old master when asked the difference between a good physician and a poor one replied that the good one made rectal examinations. For the purpose of urological examination the rectal route is especially valuable, and should be done on every patient. The tonus of the sphincter muscle alone speaks volumes when a tabetic bladder (e.g.) is being dealt with, and due to the intimate interconnection of the nerve supply, a spastic sphincter would suggest further study of the bladder. We are all quite familiar with the rectal examination of the prostate, however, I have been amused to observe five or six urologists examine the same patient at the same time and give a detailed description of their findings. Their failure to coincide only emphasizes the necessity for a detailed and careful examination of every feature of the gland. In most instances while a rectal investigation is being made it is wise to secure a specimen of prostatic fluid for microscopic study. The most embarrassing consultation I have had this year was in a very prominent and important case in which we were searching for a focus of infection that was causing arthritis. I very promptly suggested the prostate as the offender and made a digital examination. The gland was not tender, it was of less than normal size for a man of fifty-five years. There were no areas of induration, nodules or other irregularities. In fact it was so completely normal that I passed it as such. The consultant found the secretion almost pure pus as did I when I did what I'm advising you to do in every case, put it under the scope. This case was that of a non specific infection and was evidently a metastatic abscess from tonsillar infection. I have had three cases this year of similar nature, hence I would stress the importance of looking for the original infection when faced with a difficult case. The examination of the rectum of course should always include the

seminal vesicles also for these glands are regular reservoirs of trouble. If the patient stands flat on the floor, knees straight with the elbows on the knees, the vesicles can be palpated in most instances and especially if any pathology is present. I know men who claim to be able to get information about the lower end of the ureters from rectal examination, but I can't often do it. I have discovered ureteral tenderness and one stone by vaginal examination. No examination of the urological patient can ever be complete until a thorough clinical study has been made. The most important factor to note however in the order named, are heart, blood pressure, reflexes, lungs, mucous membranes. It is surprising though how little information one often gets from the usual inspection, palpation, percussion and auscultation quartet of some fame. It is generally from the history and the special examinations that we are able to make a diagnosis, and speaking of palpation Pottinger (the master of that particular art) has called attention to a test that I have found valuable. When kidney tissue is inflamed there is often a spasm of the lumbar muscles while the abdominal and cremasteric muscles become tense during all attacks of "renal colic," for he correctly points out that renal colic is a ureteral and not a kidney reflex. To detect this lumbar spasm the patient should be seated on a stool with the feet resting on the floor and the lumbar group relaxed. Palpation will then reveal the increased tonus.

I have purposely left a short discussion of the history in urological cases to the last for there I think it belongs. It takes a few more minutes to examine before you get a clue but it pays in good work and in the thrill experienced when you discover your findings and the patient's diagnosis agree. The objective approach is correct. History taking is an art and in urology a fine art. Stokes has given us some excellent pointers. Of first importance is that we be considerate of the patient's feelings and do not let the venereal concept of urological conditions creep into the picture. Be persistent, but do not stir up what salesmen know as "sales resistance." Speak in the vernacular, and ask questions in a manner and tone as if the answer was expected to be correct, for it is extremely easy to fall into the habit of asking leading questions. One other very important feature of the history is inquiry into disturbances of sexual function. Neurosis is coming to be

a common diagnosis in many branches of medicine but there is scarcely a justification of this conclusion in urology except as related to the sexual act and there it is frequently encountered. The patient vaguely understands his disorder, but interprets it as bladder or kidney trouble. Both tact and patience, together with genuine interest in the sufferer and more than a smattering of an understanding of the underlying principles of psychiatry are necessary for his relief.

The X-ray and special examinations are subjects in themselves and their discussion in any detail would make this paper that much further too long. Roentgenograms are at once the most valuable and most abused of the "near-urologic" art. Young's atlas of urological conditions and Braaschs' urography are the greatest aids in their interpretation. Though even with these, much apprenticeship should be served before one has the temerity to act on the X-ray information. There is one X-ray examination which is of value even to the man with a one-horse X-ray machine and no cystoscope, and which should be used more often, *viz*: the cystogram, as I shall show you on the screen in a few minutes. Cancer, diverticula and many other features are easily shown. The only requirement is a bottle of sodium iodide and a catheter. There has been some rumor that intravenous urography would do away with the necessity for urologists, whereas it only broadens his field. It does have a limited field of usefulness and will reduce the number of cystoscopic examinations, but the manner of securing an X-ray picture does not in any way assist in reading and interpreting it. And there is where the expert comes in. Any intelligent student can learn to make a retrograde pyelogram in a short time, but for the interpretation it requires more years than I have yet practiced.

Some diseases of the G. U. tract are in the present state of our limited knowledge undiagnosable. Many such are time consuming and tedious, but the majority of them can be properly diagnosed provided we proceed in a systematic way. Get the facts, correlate and interpret them properly. While lack of training and poor judgment based on non critical experience are continually to be reckoned with I believe that simple and inexcusable laziness is the chief hinderance in the field of urological examination today.

## MACROCYTOSIS OF ERYTHROCYTES AND ACHLORHYDRIA IN PERNICIOUS ANEMIA

Russell L. Haden, Cleveland (Journal A. M. A., Jan. 16, 1932), believes that an increase in size of the average erythrocyte, best indicated in terms of volume, is the most constant and characteristic finding in the blood in the presence of pernicious anemia. An increased volume index was found in every patient in a series of 152 cases studied by him. Free hydrochloric acid is seldom, if ever, found in the gastric contents of a patient with idiopathic pernicious anemia. An achlorhydria was demonstrated in every one of the 152 patients. The mean corpuscular volume may be quite even with a relatively high count; therefore it does not vary with the red cell count. If the deficiency which is responsible for the disease is adequately supplied, the cells return to normal size. The first indication of a relapse or a lack of a sufficient quantity of the missing principle is an increase in the volume of the red cells. Macrocytosis may occur in the presence of conditions other than pernicious anemia, but was found only 9 times in a study of 411 patients and normal individuals. Achlorhydria is a frequent finding in various clinical conditions, especially in the age period in which pernicious anemia is most common. A combination of macrocytosis of the erythrocytes and achlorhydria is seldom if ever found, except in the presence of pernicious anemia. The finding of an absence of free hydrochloric acid on gastric analysis and an increased mean corpuscular volume or plus volume index is a practically constant finding and one that is necessary for the diagnosis of active pernicious anemia; if demonstrated, it is almost pathognomonic of the disease.

## RELATIONSHIP OF VITAMIN A TO RESPIRATORY INFECTIONS IN INFANTS

L. H. Barenberg and J. M. Lewis, New York (Journal A. M. A., Jan. 16, 1932), present the results of an investigation to ascertain whether any relationship exists between the vitamin A content of the diet and the occurrence of respiratory infections. The incidence and severity of these infections were determined in four groups of infants, receiving various quantities of vitamin A in their diets. The first group comprised nineteen infants receiving partly skimmed milk; the second, ninety-four infants receiving pasteurized milk and 20 drops of viosterol; the third, eighty-five infants receiving pasteurized milk and 3 teaspoonfuls of standardized cod liver oil, and the fourth, six infants receiving pasteurized milk and 6 teaspoonfuls of cod liver oil. All infants were given orange juice at 6 weeks, butter at 6 months and vegetables at 8 months of age. Thus the four diets represented a small, a moderate, a large and a maximum amount of vitamin A. These infants were observed in an institution, for periods varying from four to twelve months. Respiratory infections were classified as mild, moderate or severe (purulent otitis media, mastoiditis and pneumonia being classed as severe infections). The results may be summed up in a few words: No significant difference in incidence or severity of respiratory infections was noted in the four groups of infants. Thus the group which received the largest daily amount of vitamin A, through the addition of cod liver oil, was not protected against respiratory infections to a greater degree than the other groups.



# DICE REMOVED FROM CHILD'S BRONCHUS ON FRIDAY THE THIRTEENTH

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About 6:00 p. m., on November 13, 1931, Dr. Norman called me and reported that there was a child in his office with a history of having swallowed a foreign body; that it was blue, coughing up blood, struggling for breath and seemed to be in need of immediate attention.

The patient was seen about one-half hour later at Morningside Hospital. It was not blue, breathing was quiet and seemed quite comfortable. The history obtained was that about 5:00 p. m., the child had been playing with a small toy spoon, the type which comes in packages of candy. The mother's attention was attracted by the child gagging, coughing, struggling for air and became blue. She ran her finger down the child's throat and gave it white of egg and soda water. Apparently the symptoms were somewhat relieved and she then took it to Dr. Norman's office.

The patient was a well developed and well nourished child three years of age. There was a history of measles and whooping cough when one year of age, since which time health has been good.

Examination of the throat showed no blood present, tonsils were large and mouth clean. Heart sounds were good, though rapid. No murmurs were heard. Breath sounds were harsh with coarse rales over the trachea. Breath sounds over the right lower chest were not quite so distinct as over the left side. X-ray examination showed a rather dense foreign body apparently lodged in the right stem bronchus.

In the operating room a light ether anesthetic was contemplated and started. The patient coughed, breathing became irregular and difficult and stopped entirely. A laryngeal speculum was inserted. As soon as the larynx was exposed a foreign body was seen against the under surface of the vocal cords. A bronchoscope was inserted and breathing started. Considerably bloody mucous in the trachea was removed by suction. The foreign body was seen bobbing up and down in the trachea with respirations. The bronchoscope was passed down and the foreign body fixed in the right stem bronchus. About this time the child vomited a large amount of gastric contents. The bronchoscope was withdrawn and the material removed. Bronchoscope was again inserted and the foreign body located in the right stem bronchus where it had remained fixed. Attempt was made to grasp the foreign body which could not be done easily. A small hook was inserted and attempt at rotating the foreign body was made. This could not be done successfully. Another forcep was inserted and after two or three grasps a firm hold was obtained. The forceps with the foreign body in the jaws were drawn against the end of the bronchoscope, the bronchoscope and forceps then being withdrawn together. The foreign body was found to be a small amber colored dice. The child was put to bed.

On the following morning the patient

was resting comfortably and seemed in good condition. Breathing was a little noisy and breath sounds over the entire chest were harsh. The parents were advised to keep the child in the hospital, but they insisted on taking it home.

On November 17, the father called and reported that on the night of the 14th, the child's breathing had been a little noisy, but during the last two days the condition had improved rapidly and that today the child was up and seemed about normal.

#### SUMMARY

I think that this case well illustrates some of the actions and reactions in a case where a foreign body has lodged in the trachea.

1. The distressing symptoms produced at the time of the accident and the subsidence of these symptoms when the foreign body has become fixed in a bronchus.

2. The treatment instituted by parents and friends at the time of the accident with the after results experienced in the operating room.

3. The tracheo-bronchitis produced by a moving foreign body in the trachea, being less marked in foreign bodies of this type than in those of vegetable substances.

4. That the surgeon does not always know what he is looking for.

5. That in this family there are four sisters and three brothers living and well.

#### CLINICAL RESEARCH IN OTOLARYNGOLOGY

Edmund Price Fowler, New York (Journal A. M. A., Jan. 16, 1932), emphasizes the fact that no matter how small or ill equipped with laboratory facilities, every clinic contains material which, properly examined and studied, will yield interesting and important information. Initiative by the worker is more important than material facilities. Too many patients put such a strain on the clinician that he has not sufficient reserve energy to initiate or carry on serious constructive investigations, and too elaborate laboratory facilities may blunt his faculties by engendering the habit of relying too much on them for diagnosis. If he does not engage in serious and continued investigation, the clinician suffers from lack of advancement in his study of disease and the patient from the lack of knowledge acquired therefrom. As an aid in facilitating clinical investigation the author presents a chart for recording observations. The advantages of such a chart are obvious. The answers to the preliminary questions may be recorded, and sometimes even satisfactorily obtained, by a secretary or assistant, thus relieving the examiner of some of the tedious and time consuming elements in the

examination. The appellations, abbreviations and groupings further conserve time and space. The reverse side is left blank for recording observations that do not exactly fit into the standard form. The author believes that if one will use some such chart as it is designed to be used there can be no doubt that the labor entailed will some day be rewarded by the discovery of coincidences, coordinations, comparisons and accumulations of facts that mean something of importance that constitute, in fact, a discovery in cause and effect.

#### ASCARIS LUMBRICOIDES: LOSS OF INFESTATION WITHOUT TREATMENT

The results obtained in a study by A. E. Keller, Nashville, Tenn. (Journal A. M. A., Oct. 31, 1931), show that under environmental conditions which are not suitable for the transmission of intestinal parasites the worm burden of infested individuals is markedly reduced without the use of anthelmintics. In his group of patients who did not receive treatment over a period of fifteen months a reduction in incidence of 100 per cent occurred in the cases of *Ascaris*, 83.4 per cent in the cases of *Hemenolepis ana*, 75.6 per cent in the cases of *Trichuris* and 59 per cent in the cases of hookworm infestation. The study shows that proper methods of disposal of human feces are more effective in the control of the common human intestinal parasites than the use of anthelmintics alone.

#### CHEMOTHERAPY OF AMEBIASIS

Evidence presented by Chauncey D. Leake, San Francisco (Journal A. M. A., Jan. 16, 1932), indicates little hopefulness of finding an ideal agent among the kurchi or ipecac alkaloids, since the former seem too ineffective and the latter too dangerous in effective doses. Insufficient data are at hand to evaluate properly the place of the alkyl resorcinols in the therapy of amebiasis, but they deserve full investigation. As a result of their clinical success, bismuth salts also merit attention. Even a hurried experimental survey of the halogenated oxyquinolines indicates that at least one other compound in this group (iodochloroxyquinoline, or Vioform, N. N. R.) is likely to prove much better in amebiasis than the only one of the series so far attracting attention (sodium iodoxyquinoline sulphonate, or Chiniofon, N. N. R.). Indeed, vioform is the most efficient drug of any type examined so far in monkey amebiasis, and there is no indication of toxicity in its therapeutic range. Likewise, among the organic arsenicals it is obvious that experimental search already reveals compounds of this type better than the only one in the group (acetarsone) so far awarded clinical consideration. Indeed, controlled clinical trial of 4-carbamino-phenyl-arsonic acid ("Carbarsone"), based on fair preliminary experimental data, indicates its superiority to any amebicide in ordinary use, especially in its marked effectiveness in nontoxic doses. In comparison with other chemical types of amebicides, the organic arsenicals are significant in manifesting a general "tonic" effect, difficult to evaluate experimentally but clearly evidenced clinically. But they may exhibit toxic effects which make it expedient to employ them cautiously.



# ACHONDROPLASIA

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Achondroplasia of chondrodystrophy as a clinical and pathological entity needs no brief—we are all acquainted with that type of individual, embodying the characteristic combination of short arms and legs, apparent long trunk and large head. It is without doubt essentially a problem of genetics.

The etiological factor in this deforming condition, has been disputed over the past half century, from the year 1856 when Virchow accurately described this malady. As in most of such like diseases, even prior to their presentation and description, such existed. Ancient Egypt, in leaving to us fragments of their life, show characteristic chondrodystrophic types of figures as their gods, worshipping them as deities.

Virchow regarded the disease as a type of congenital myxoedema, whereas Muller some few years later considered these deformities manifestations of cretinism. It is now regarded quite generally as a distinct clinical entity, although even yet, some few writers fail to distinguish it from rickets, cretinism, Ollier's disease, micromelia, osteogenesis imperfecta and other similar diseases.

The characteristic shortening of the long bones has been studied and according to Bangson, it is "due to a defect in the formation of cartilage at the epiphysis on

the ends of the long bones." Jansen in 1921, advanced the hypothesis that achondroplasia results from abnormalities of the amnion, possibly a smallness of the amnion, with increased hydrostatic pressure, causing an impoverished nutrition of the parts with a subsequent diminution of growth and the power of growth. Pick states that the cartilage proliferates only insufficiently, the ossification comes to a premature termination, later a strip of periosteum inserts itself between the diaphysis and epiphysis and prevents the further growth in length of the bone.

One of the cardinal features of this disease, the large head, has received many explanations as to its cause. Dandy states the enlargement is absolute rather than relative, and by careful clinical observations and necropsies concludes it can be due only to an increased pressure exerted by the intra-cranial contents. This, he suggests may be conceivably due to an obstruction of the cisternae under the pons and midbrain, following the gradual shortening of the base of the skull.

Therapeusis is necessarily symptomatic. Examination of the blood reveals a dysfunction, usually of the thyroid gland. All glandular preparations given, have proven to be of no merit. Osteotomy may occasionally be indicated, especially in

Ollier's disease to correct deformities; usually the hydrocephalus is self arrested if the patient passes the childhood years. If mental impairment is evidenced and progressive, careful examination for signs of a block defining and locating the cause of the hydrocephalus, a rational form of operative treatment may be indicated.

#### CASES

Five children, age one and one-half to ten years, are the offspring of perfectly normal parents. Father thirty-six years, mother 28 years, of English extraction, American born. Grandmother on mother's side quite obese, weight 385 pounds. All other relatives dating from great grandparents normal. Married kin of both parents are all essentially normal. No alcoholism, no syphilis, no insanity, no hereditary type of disease reported in past ancestry.

Labors perfectly normal, full term and attended by midwife. No miscarriages. Weight at birth ranged from 6 to 8 pounds.

These infants at present, seem perfectly happy, very cooperative, their weight ranging from 18 to 26 pounds. The two oldest in school, according to the teacher are especially bright, and play in a normal fashion with other children. They have had no sickness, save diphtheria, no headaches, no complaints. The father states that he had noted no marked increase in the size of their heads.

These cases seem particularly interesting, as careful questioning of the parents, who seem well informed as regards their geneological tree, reveals no suggestive cause. To repeat again, it is probably a problem of genetics, and only by careful and long continued study can we hope to elucidate the factors involved.

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#### INTRAVENOUS USE OF EXTRACT OF LIVER

A readily prepared extract of liver (fraction G), hitherto administered by mouth, has been found by William B. Castle and F. H. Laskey Taylor, Boston (Journal A. M. A., April 11, 1931), suitable for intravenous injection and highly potent in pernicious anemia. Maximal reticulocyte responses were obtained from a single intravenous injection of the amount of extract derived from 100 Gm. of liver. One of the patients so treated had failed to respond satisfactorily to the previous oral administration of a similar extract derived from 3,000 Gm. of liver given within a period of ten days. The possible etiologic and therapeutic significance of these observations is discussed.

#### DECOMPENSATED PORTAL CIRRHOSIS: ONE HUNDRED AND TWELVE CASES

Charles B. Chapman, Albert M. Snell and Leonard G. Rountree, Rochester, Minn. (Journal A. M. A., July 25, 1931), review the cases of portal cirrhosis and ascites studied at the Mayo Clinic in the last six years in the hope of learning more about the effectiveness of present therapeutic measures and also of the natural course and prognosis of the disease. The material selected for study comprises a group of 112 cases chosen from a group of more than 300 in which a diagnosis of portal cirrhosis had been made. In all the cases selected ascites was present, and all had been studied with sufficient care to insure the greatest possible accuracy in diagnosis. Cases in which there were such complicating factors as primary cardiac or renal disease, or chronic peritonitis, were excluded. In all this group, follow-up records were available. In twenty-eight cases necropsy was performed, and in twenty-eight additional cases the diagnosis was confirmed by examination of the liver at operation. Results of study of the etiologic factors in the group of cases is summarized in a table. Alcohol heads the list of possible causes; however, in many of these cases consumption of alcohol was not excessive and may not have been the sole factor in producing hepatic injury. The significant symptoms in the group are presented in another table. The authors regard ascites as a critical manifestation and have accepted it as definite evidence of decompensation of the portal circulation. It was present in all the cases included in the series. It had been of sufficient seriousness to require tapping of the abdomen in forty-five of the patients before they registered at the clinic. Of the group of 112 cases of portal cirrhosis with ascites, 84 were treated along the lines outlined by Rountree, Keith and Barrier. Most of the patients were given a special diet containing 800 cc. of water and inorganic ions, as follows: sodium, 0.49 Gm.; potassium, 1.76 Gm.; calcium, 0.23 Gm.; magnesium, 0.20 Gm., and chlorine, 0.74 Gm. An additional 800 cc. of water is allowed. Ammonium chloride or ammonium nitrate was given in doses of from 5 to 10 Gm. daily and merbaphen (novasurol) or mersalyl (salyrgan) were given intravenously about every third or fourth day. In some instances purine diuretics, especially metaphyllin, were employed, either conjointly or alternately with ammonium salts. Under such treatment, satisfactory diuresis frequently occurs, the ascites diminishes in amount, and there is marked reduction in distention of the superficial abdominal veins. The subjective symptoms of the disease are frequently greatly relieved, and the immediate results of this type of treatment have been surprisingly good. The effects of this type of treatment may be summarized by saying that about 80 per cent of the eighty-four patients treated have shown some response to treatment. About 47 per cent obtained excellent results, 32 per cent obtained fairly satisfactory results, and 21 per cent obtained poor results. In spite of the time required for this type of treatment, it is preferred by many patients to paracentesis. It is also apparent that ascites recurs much more slowly after medical treatment than after paracentesis. Mild toxic reactions occurred in about 35 per cent of this group of cases and consisted chiefly of diarrhea, chills, fever and hematuria detectable only on microscopic examination of the urine. In only a few instances were these reactions particularly severe, and in most cases it was possible to carry the treatment through to a successful conclusion in spite of them.



# FRACTURES OF THE ELBOW IN CHILDHOOD

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As Edna Ferber has said, "Anything can happen in Oklahoma, and most things have happened," so with fractures around the elbow joint in children, anything can happen and most things have happened. Fractures in and around the elbow joint affect the joint either directly or indirectly. This fracture is more frequent in childhood than in adult life. The injury gives a most confused picture. As you take hold of one of these fractures, the elbow often gives the feel of a sack of loose bones, so scattered are the fragments. Even the X-ray picture is very confusing. There often seems to be a complete dissolution of the elbow joint.

It is impossible to give all the variations of such fractures. Only a few of the fundamental facts can be mentioned. The essential points that are of value in all fractures are of special importance here.

A thorough and detailed examination must be made under a general anesthetic. It is most important that a comparison shall be made with the normal joint in the other arm. Familiarity with the normal bony landmarks must be had. The knowledge of the appearance of X-ray films at different ages is essential. The centers of ossification of the condyles join the shaft at different ages. In X-rays these may wrongly be interpreted as separate fragments unless this fact is remembered.

Examine an antero-posterior view of a normal elbow fully extended. Note that the internal and external condyles and the tip of the olecranon process are nearly in transverse line. The carrying angle is easily seen. The degree of this angle varies greatly in different individuals and in some is practically absent altogether. This must be compared with the uninjured arm.

Take a lateral view of a normal elbow flexed at a right angle. In this you see that the two condyles and the tip of the olecranon are in nearly the same sagittal plane, almost in, but a little an-

terior to, the line of the shaft of the humerus. The articular surface of the humerus faces a little anteriorly as well as downward. The lower end of the humerus seems to bend forward just a little when viewed from the side.

An X-ray film of a fracture of the elbow in an adult, gives you a better idea of the complexity of these fractures. Note the numerous small irregular fragments, scattered around everywhere. There is very little evidence of any joint left. These are the cases which when you take them in your hand, feel like a sack of loose bones and that is what they really are.

The various types of fractures that you may have are, transverse fractures of the shaft of the humerus just above the elbow joint, fracture of either or both condyles, T-fractures going into the elbow joint, separation of the lower epiphysis; this is especially frequent in childhood, fracture of the olecranon process of the ulna, fracture of the coronoid process of the ulna, often associated with a posterior dislocation of the ulna, and fracture of the head of the radius. But more frequently there is a dislocation of the head of the radius, associated with one or more of the fractures mentioned.

In a transverse fracture thru the condyles in a child and in an epiphyseal separation of the lower end of the humerus in a child you will note the posterior and lateral displacement of the lower fragment. This is the usual displacement in fractures about the elbow. The lower fragment with the forearm is carried backward and to one side.

As in the examination of these cases so also in the treatment, there are several fundamental principles that are essential. These fractures more than in any other location in the body should be reduced early. The swelling about the elbow joint is rapid and very extensive. This swelling not only interferes with the examination,

but often makes a complete reduction and proper position of the arm impossible at the first visit. An early and correct reduction, more than any other factor lessens this swelling, so every effort must be made to reduce these fractures early.

Acute flexion of the elbow joint is the basis of the treatment of these fractures. After reduction of transverse fractures and of epiphyseal separations note the small lower fragments which were posterior and to one side of the shaft of the humerus, have been drawn downward into their proper positions. The antero-posterior views have been taken with the humerus flat on the plate and the rays going thru the ulna and radius, which is the most satisfactory angle to take this view. This shows the lateral alignments to be very good. Acute flexion also will take care of the carrying angle if the fore-arm is parallel with the upper arm.

These cases, when put up in this manner, above all others, must not be allowed to get away from constant observation for the next twelve to twenty-four hours, because of the great swelling that always is going to take place, if it is not already present. Some responsible adult must definitely understand that if the fingers or hand becomes blue and swollen the dressing must be cut sufficiently to allow the forearm to extend a little to relieve the condition. Serious and permanent damage will occur if this is not done. As the swelling recedes the fore-arm is to be slowly brought back up to its acutely flexed position. As the acutely flexed position cannot be obtained until the swelling diminishes, you must play these cases back and forth as the condition permits and see them frequently, two to three times daily, until they have reached a stationary position.

After two weeks, the dressing is to be removed daily and the elbow gradually given light massage and passive motion and put back up in the flexed position. In about four weeks the arm can be carried at a right angle in a sling. Extent of motion is gradually increased until the normal is reached.

If you do not reduce these fractures properly, check them by X-ray or the fluoroscope after reduction and also at frequent intervals during the course of treatment, you get a permanent posterior angulation of the lower fragment. A recent case came to us six weeks after its occurrence and after being treated in a plas-

ter cast for that length of time. The doctor stated that he had the proper position after reduction as shown by an X-ray, but put it up with the fore-arm at a right angle and did not check it again until it was taken out of the plaster. Always remember, the position of fragments of a fracture can change within a plaster cast.

In conclusion we wish to emphasize the following points:

1. Thorough examination under an anesthetic or with aid of X-rays and comparison with the normal in the other arm.
2. Earliest possible reduction, checked by X-ray or fluoroscope.
3. Acutely flexed position.
4. Continuous and intelligent watching of the swelling, for the first 12 to 24 hours with release of pressure if necessary.
5. Frequent checking of position of fragments by X-ray or fluoroscope during course of treatment.
6. Early passive motion and massage.

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#### STUDIES OF DISEASE OF LYMPHOID AND MYELOID TISSUES: VI. TREATMENT OF MALIGNANT NEUTROPENIA WITH PENTOSE NUCLEOTIDES

The nucleotide used by Henry Jackson, Jr., Frederic Parker, Jr., James F. Rinehart and F. H. L. Taylor, Boston (Journal A. M. A., Nov. 14, 1931), is prepared by the usual method of alkaline hydrolysis at room temperature, according to the technic of Jones and Perkins. The solution, after hydrolysis is complete, is made acid with acetic acid and the crude nucleotide precipitated as the lead salt, which in turn is decomposed with hydrogen sulphide and the filtrate containing the purified nucleotide is exaporated under diminished pressure at a maximum temperature of 50 C. to a small volume and neutralized with sodium hydroxide. From the resulting concentrated solution, sodium nucleotide is removed by absolute alcohol and dissolved in distilled water, and sufficient tricesol is added to make a 0.3 per cent solution. After it has stood in an icebox for two weeks the ph is adjusted to 7.0 and the solution is run through a Berkefeld filter directly into small, sterile ampules. This preparation has been designated as "Nucleotide K 96" Twenty patients with malignant neutropenia of varied etiology were treated with intramuscular and intravenous injections of this preparation. In fourteen of these twenty cases, recovery took place. Clinical and hematologic improvement occurred quite consistently about five days after treatment was begun. The authors believe that these nucleotides may have a definitely favorable effect on an inactive bone marrow in certain cases of malignant neutropenia and that the substance is worth further trial in such cases. The material is apparently of no benefit in leukemia or sepsis without neutropenia and leukopenia.



# THE JOURNAL

OF THE

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### PAY YOUR DUES FOR 1932

With this issue delinquent members will be cut from the mailing and all other lists. Post Office regulations require that this be done and the Constitution and By-Laws do provide that unrenewed memberships lapse, February 1st.

We are quite well aware that in many instances, failure to remit is due to pure negligence, in others no doubt it is the economic situation. For the information of our membership our affairs are in very good condition, all things considered.

See your County Secretary at once, if you have not remitted for 1932.

### SCIENTIFIC EXHIBITS

It should not be forgotten by those interested in having Scientific Exhibits that provision for these will be made at the Tulsa meeting. However, those contemplating exhibits should make reservations by correspondence with the office of the Secretary *at once*. Last year a great deal of confusion resulted because some of the exhibitors waited until the last moment to install their material.

This year all meetings, exhibits and etc., will be held in the Mayo Hotel, May 24, 25, 26.

It is therefore requested that those interested begin to make their plans at once.

### HEAD INJURIES

Elsewhere in this issue appears a very thorough abstract of a thirty page article by Doctor Temple Fay, Temple University Hospital, Philadelphia, upon "Clinical Considerations Surrounding Head Injuries." This article by Doctor Fay and the abstract by Doctor Long are so important, not only to surgeons but to the physicians called upon to treat any and all types of head injuries, that the abstract should be read as well as the original article by Doctor Fay, which appears in the December, 1931, Surgical Clinics of North America.

The article positively interdicts, as a rule, too early and dangerous surgery. It indicates that a great many cases of fractures may be saved if the eventual cause of death, which is not the fracture, but edema and hemorrhage, with consequent pressure, is promptly and intelligently treated. The fracture in itself, if not followed by violent hemorrhage, disorganization of the brain or edema, does not cause death, therefore there is no hurry to rush the patient to an operating table, but there is the greatest demand that treatment to obviate edema, shock and etc., be immediately instituted wherever and whenever possible.

This article should be read by every member of the Oklahoma State Medical Association.

### PITTSBURG COUNTY PHYSICIANS PROTEST

Press dispatches indicate that the forty doctors, members of Pittsburg County

Medical Society, refuse to assume responsibility for free health work for 50,778 persons in the County. It seems to the Journal that this attitude is correct. It all started over a proposition to discontinue the Public Health Unit which had been "eminently satisfactory" in its function. The Journal can see no more reason for the hundreds of charity cases which will need attention as well as the thousands which will need various preventive measures, being thrown upon the hands of the general practitioner of Pittsburg County, than to hand them over to the tender mercies of the banker, merchant, clothier, other businesses and finally the undertaker without some semblance of remuneration. It was once pointed out before, that any one of these indigent persons committing a crime, has appointed for him an attorney, free, to keep him out of jail or see that he gets a fair trial, so we cannot see why a small pittance should not be provided to care for his illnesses. In other words we can see no difference in attempting to save a man from legal electrocution than to save the same man from typhoid, pneumonia or some severe injury.

Every individual physician has a large number of people for whom he works for nothing. The public knows nothing of this, but it is certainly the duty of the State and its subdivisions to care for the helpless in their particular community. If we are not mistaken the basic law of the State indicates that that is a duty of the County and the County Commissioners concerned and we can see no more reason for not providing a salary for a health officer than not providing a salary for a sheriff or judge.

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### DOCTOR BEVAN SOUNDS OFF

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Very much to the surprise and chagrin of thousands of respectable, law-abiding physicians, Doctor Arthur Dean Bevan, Chicago, formerly President of the American Medical Association, saw fit to testify before a committee in Washington upon the prohibition question, to the effect, in substance, that many, many physicians signed their liquor prescriptions in blank and sold them to the druggist. No doubt this has occurred, but it certainly has not occurred to any great degree in the medical profession. In the first place a physician who was guilty of that practice would obviously be marked as somewhat of a fool as well as violating a Federal

law. Of course all kinds of men make up the medical profession, but it is the sincere belief of the writer that Doctor Bevan has done the profession, as a whole, an injustice in testifying in the role in which he is reported to have appeared. The difficulty in determining the number of physicians who practice selling their prescriptions in blank is apparent and it is not believed that Doctor Bevan is in any better position to determine the number than any other well informed observing physician. It is the opinion of the writer that hundreds of physicians do not take out license authorizing them to issue such prescriptions and it is common knowledge that hundreds of others who do have license are very chary about promiscuous issuance of prescriptions.

It is regrettable that a man formerly holding the high position of President of the American Medical Association should make the statements credited to him. Possibly this law is disregarded more in Dr. Bevan's neighborhood than elsewhere in the United States, but that is difficult to believe, and we doubt if the eminent surgeon has much great personal knowledge on the matter.

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### THE OKLAHOMA INCOME TAX

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Oklahoma physicians generally understand the terms of the Federal income tax, but it is doubtful if many of them understand that the last Legislature passed an act very much lowering the original income tax. This may be found in the Session Laws of Oklahoma, 1931, page 236, chapter 66, article 7. However, it is advised, where there is any question in the physician's mind, that he consult some tax attorney or other informed person as to his return.

The law requires that the following individuals each make, under oath, a return stating specifically the items of their gross income and the deductions and credits allowed under this act.

- (1) Each individual having a net income of \$750.00 or over, if single, or if married and not living with husband or wife.
- (2) Each individual having a net income for the taxable year, of \$1500.00 or over, if married and living with husband or wife;
- (3) Each individual having a gross income for the taxable year, of \$2500.00 or over, regardless of the amount of his net income.

Certain returns from insurance, the



value of property acquired by gift or bequest, interest upon the obligations of the United States; salaries, wages and other compensations received from the United States, by officials or employees thereof, etc.; amount received through accident, disability or health insurance or under Workmen's Compensation Acts, dividends received from stock in any corporation, are exempt from the tax. \$750.00 is exempt in the case of a single or individual taxpayer and \$1500.00 in the case of a husband and wife.

This is of extreme importance to every physician, in the State, for some form of return must be made as a penalty of \$10.00 per day may be assessed for failure to make the return.

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#### THE CLINICAL LABORATORY AND THE PROHIBITION LAWS

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Resulting from an Amendment to Section 6982 C. O. S. State of Oklahoma, 1921, as amended by Chapter 34 Session Laws of Oklahoma, 1929, clinical laboratories in the State of Oklahoma are denied the use of tax paid ethyl alcohol unless they are engaged in "purely scientific research" in the most restricted sense of the word, and this is borne out by a written opinion of the Attorney General's Department on the State of Oklahoma as rendered to the Treasury Department, Bureau of Industrial Alcohol, in June, 1931. Consequently all alcohol permits for clinical laboratories in the State of Oklahoma were disallowed beginning January 1, 1932, the Treasury Department taking the position that they must necessarily uphold the laws of any individual state. The Attorney General's opinion however does state that clinical laboratories may obtain tax free alcohol from the Bureau of Industrial Alcohol providing such is obtainable but tax free alcohol is limited by the federal government to use by government bureaus, by any state or municipal subdivision thereof, by colleges, universities, bona fide hospitals and by laboratories for use "exclusively in scientific research."

The Bureau further holds that general clinical laboratory work as done by the medical profession does not come within the term "scientific research" and that therefore alcohol cannot be withdrawn from the federal warehouses for their use.

The above represents the situation as regards the use of alcohol in clinical labora-

tories in the State of Oklahoma at the present time. There is clearly either an over-zealous tendency with regard to legislation regarding alcohol or else unfortunate terms have been used in the law or there has been a misconstruction of the interpretation of the term. The net result has been that the clinical laboratories in this State are being forced to carry on some of their work contrary to the law as there are some tests and clinical procedures in a clinical laboratory that cannot be carried on without the use of pure ethyl or grain alcohol. It would seem utterly absurd that anything bearing so intimately upon the general welfare of the public health should be put in such a position and it is to be hoped that either the national legislature or the state legislature at the earliest possible time will see fit to correct such an injustice to the profession and to the public. It is no wonder that the medical profession in general is disgusted with the present operation of the prohibition laws.

PAT FITE.

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#### TULSA COUNTY COMMITTEES

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Doctor W. J. Trainor, Tulsa, Chairman of the Committee on Arrangements on behalf of the Tulsa County Society, announces the following Committees to handle the work of the annual meeting, at Tulsa, May 24, 25, 26, 1932:

*General Chairman.* W. J. Trainor, 1011 Medical Arts Bldg., Tulsa, Okla.

*Registrations.* C. C. Hoke, Petroleum Building, Tulsa.

*Finance.* W. Albert Cook, 1107 Medical Arts Bldg., Tulsa.

*Entertainment.* W. A. Showman, 409 Medical Arts Bldg., Tulsa.

*Hotels.* James Stevenson, 615 Medical Arts Bldg., Tulsa.

*Golf.* Charles J. Wood, 511 Medical Arts Bldg., Tulsa.

*Ladies' Entertainment.* Women's Auxiliary of The Tulsa County Medical Society, Tulsa.

*Reserve Officers.* Paul R. Brown, 517 Medical Arts Bldg., Tulsa.

*Scientific Exhibit.* Morris B. Lhevine, 1007 Medical Arts Bldg., Tulsa.

*Fraternal Dinner.* Ralph A. McGill, 1010 Medical Arts Bldg., Tulsa.

*Badges.* J. C. Brodgen, Mayo Bldg., Tulsa.

## SECTION CHAIRMEN ANNUAL SESSION

*Surgical Section:* Chairman, Dr. Fred S. Watson, 401 Commerce Bldg., Okmulgee, Oklahoma.

Secretary, Dr. W. G. Husband, Hollis, Oklahoma.

*Eye, Ear, Nose and Throat:* Chairman, Dr. A. L. Guthrie, Medical Arts Bldg., Oklahoma City, Okla.

Secretary, Dr. J. F. Gorrell, Medical Arts Bldg., Tulsa, Okla.

*General Medicine:* Chairman, Dr. Henry H. Turner, 1200 North Walker, Oklahoma City, Okla.

Secretary, Dr. Fred H. Dorwart, Barnes Bldg., Muskogee, Okla.

*Dermatology and Radiology:* Chairman, Dr. Charles J. Wood, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Carl L. Brundage, Medical Arts Bldg., Oklahoma City, Okla.

*Pediatrics:* Chairman, Dr. C. E. Bradley, Medical Arts Bldg., Tulsa, Okla.

Secretary, Dr. Geo. H. Garrison, 1200 North Walker, Oklahoma City, Okla.

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### Editorial Notes—Personal and General

DR. AND MRS. R. L. MURDOCH, Oklahoma City, announce the birth of a baby boy, February 22, 1932.

DR. O. O. HAMMOND, announces the opening of his office, 804-805 Medical Arts Building, Oklahoma City.

DR. J. H. LAWS, Broken Arrow, has returned from Kansas City, where he has been for the past eight weeks on account of his health.

DR. PAUL SANGER, Yukon, has opened an office in that town. He is the son of the late Dr. S. S. Sanger, who formerly lived in Yukon.

DR. FRANK H. MCGREGOR, Mangum, attended the February meeting of the American Medical Association on Hospitals and Medical Education, held in Chicago.

DR. G. N. BILBY, Oklahoma City, Commissioner of Health, announces that antidiphtheria clinics were held in Rocky, Sentinel, Cordell, Colony and various western Oklahoma towns in February.

GRADY COUNTY MEDICAL SOCIETY elected the following officers for 1932, at their recent medical meeting: Doctors, J. C. Ambrister, president; L. E. Woods, secretary-treasurer; C. P. Cox, first vice-president; C. P. Mitchell, second vice-president; Roy E. Emanuel, delegate; Walter Baze, censor, all of Chickasha.

DRS. C. DOLER, superintendent, and R. S. Hickman, member of the Staff of the State Tuberculosis Hospital at Clinton, addressed the Jackson County Medical Society at Altus, February 26th. A good attendance was reported.

OTTAWA COUNTY MEDICAL SOCIETY met at Picher, February 12th. Dr. D. L. Connell was toastmaster. A short business session preceded a chicken dinner. Nearly all towns of Ottawa County were represented and a Missouri physician was a guest.

KAY COUNTY MEDICAL SOCIETY met, January 28th, at Blackwell, for their monthly meeting. Doctors Howard S. Browne and J. C. Wagner, Blackwell, spoke on "Strabismus," and "Traumatic Neurosis," respectively. Dr. W. M. Leslie opened the discussion, and a round table discussion followed the reading of Dr. Wagner's paper.

COMANCHE COUNTY MEDICAL SOCIETY met, January 28th, at Lawton for their regular session. The program was in charge of Major Howard Hume and Lieut. Kermit H. Gates of Fort Sill. Lieut. Gates read a paper on "Some of the Results of Syphilitic Treatment in the Army," which was freely discussed by a number of doctors present.

MUSKOGEE COUNTY MEDICAL SOCIETY was entertained on February 24th at the United States Veterans' Hospital, Muskogee, Oklahoma, by the staff of the hospital. A very interesting program consisting of motion picture film "Diagnosis and Surgical Treatment of Peptic Ulcer." Lantern slide discussions of "Kidney Anomalies," "Joint Mice," "Eventration of the Diaphragm," and "Carcinoma of the Heart," was presented.

CREEK COUNTY MEDICAL SOCIETY met in Drumright, February 25th. Dr. O. W. Starr, Drumright, presented a paper on "Case of Carcinoma of Stomach"; Dr. W. J. Neil, Drumright, discussed the present status of the County Health Office; Dr. R. Q. Atchley, Tulsa, presented a paper on "Treatment of Fractures by the Skeletal Traction Method." A banquet followed the reading of the papers.

STEPHENS COUNTY MEDICAL SOCIETY members were the guests of Dr. C. N. Talley, Marlow, January 26th, at a banquet. After the banquet, Dr. Lewis J. Moorman, Oklahoma City, gave an illustrated lecture on "Some of the Recent Developments and Treatment of Pulmonary Tuberculosis." Dr. Floyd Moorman, Oklahoma City, also delivered a lecture on "Phrenectomy in the Treatment of Tuberculosis." This was illustrated by lantern slides made from X-ray photographs.

MUSKOGEE COUNTY MEDICAL SOCIETY and the Muskogee County Dental Society met in joint session at the Town and Country Club, Muskogee, on February 17th. Banquet followed by a very interesting scientific program. Three dental papers prepared by Drs. A. E. Bonnell, Otto L. Hine, and G. L. Dodson; three medical papers by Drs. E. H. Fite, J. Hutchings White, and Charles E. White. Some fifty-five present. At this meeting plans were made to hold bi-annual joint meetings of the two societies.



MUSKOGEE COUNTY MEDICAL SOCIETY will hold two regular meetings on March, 14th and 28th, 8:00 P. M., Severs Hotel. On March 14th the program will consist of Drs. E. H. Coachman, J. S. Campbell, and C. W. Heitzman. On March 28th an "Old Timer's" program will be presented. Drs. F. B. Fite, J. L. Blakemore, F. E. Watterfield, and C. A. Thompson will discuss medical subjects from territorial days, up to the present time. This promises to be a very interesting program, as the men assigned these subjects are well qualified.

### JAMES WESLEY TUCKER

Dr. James Wesley Tucker, pioneer physician of Lindsay, died at his home in Lindsay, Oklahoma, January 21, 1932, following an illness of several weeks.

Dr. Tucker was born in Hardin County, Tennessee, January 24, 1860. Following his graduation from Vanderbilt University Medical School in 1892, he practiced medicine at Muskogee, Oklahoma and in Indiana. In 1901 he located at Purdy, Indian Territory, later moving to Lindsay in 1919. He has been very active in the practice of medicine until the past year. He married Miss Emma Walker of Pittsburg, Tennessee, December 23, 1888.

He was an active member in the Methodist Church, 32nd degree Mason and a Shriner.

Funeral services were conducted at the Methodist Church in Lindsay, Oklahoma. Masonic services were held at the grave in Purdy, Oklahoma. He is survived by his wife, Mrs. Emma Tucker, one daughter, Mrs. Carl Marquard, and one son, Henry Tucker.

The Almighty wise ruler of the universe having seen fit to remove from our midst by death, our friend Dr. James Wesley Tucker, we resolve that our hearts go out in tender sympathy to the grief stricken family in this, their hour of sorrow, and

We do further resolve that we feel and realize that in the death our member, Dr. Tucker, we have lost a friend of christian integrity and fidelity to principle.

Resolved further that a copy of this resolution be read at the meeting of the society in March, a copy be sent to the family, and one to the Oklahoma Medical Journal for publication.

F. F. GROSS,  
C. M. PRATT,  
HUGH MONROE,  
Committee.

### ERYSIELOID IN UNITED STATES

Joseph V. Klauder and Malcolm J. Harkins, Philadelphia (Journal A. M. A., April 11, 1931), summarize thus their study of erysiploid among commercial fishermen working in fish pounds along the northern New Jersey seacoast; studies conducted at the abattoirs in Chicago and elsewhere; questioning their dermatologic confreres, and communications with veterinarians; physicians engaged in industrial medicines, and insurance companies insuring employees under the Workmen's Compensation Act: Erysiploid is rarely seen in dermatologic clinics. The infection is apparently more frequently obtained from contact with fish and crustacea and from sources other than contact with the flesh of swine. The disease among commercial fishermen is more prevalent in hot weather and is frequently a severe form of erysiploid with lymphangitis and with enlargement and tenderness of the regional lymph nodes, at times associated with mild constitutional symptoms. The clinical picture is comparable to what has been reported in the German medical and veterinary literature as swine erysipelas in man. From these cases was isolated a virulent strain of bacillus of swine erysipelas. In these patients no arthritic symptoms were observed and no acute fatal instances of the infection. The disease appears to be widespread among commercial fishermen handling live fish along the entire Atlantic seacoast and is an important disease of the fishing industry. The authors are not acquainted with any report in the literature on erysiploid among commercial fishermen which concerns this severe form. The infection seems to be much less common and also milder among handlers of fish shipped to market, both wholesale and retail. This can doubtless be attributed to less intimate contact, to the fact that the fish have been cleansed, washed and packed in ice, and to a change in the virulence of the organism through changed environment. The infection is rare among veterinarians, particularly those inspecting swine in slaughter houses. The infection is apparently not common in the meat packing industry. The mild form of the disease exists among employees in the canning industry, canning fish and other food of animal origin. The disease is an important disease of industry in the United States among employees of the aforementioned industries, not by reason of the severity of the infection but in view of the involvement of the hands, the weeks of incapacitation and the inadequacy of local treatment. The majority of the mild cases of erysiploid run a self-limited course of about three weeks. In some patients, after a short period of apparent cure, the eruption reappears either at the same area or, more likely, at an adjacent previously uninvolved area. In this way the disease may continue for many weeks, indeed, months. The disease does not appear to be greatly helped nor its course shortened by local treatment with conventional applications, such as boric acid compresses, saturated solution of magnesium sulphate, tincture of iodine, or sulphonated bitumen. The importance of rest is stressed by many writers. Ultraviolet ray and foreign protein therapy have been recommended and are alleged to be of some value in treatment. The condition seems to be more or less limited and responds but poorly to local treatment. Patients lose two or three weeks in spite of all that one can do. About the only effective treatment (one questions if it really shortens the course of the disease) is rest and heat in the form of wet packs.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**The Treatment of Obesity with Low Caloric Diets.** By Frank A. Evans, M.D., and J. M. Strong, M.D. *The Journal of the American Medical Association*, October 10, 1931, Vol. 97, P. 1063.

**Obesity and Menstrual Disorders.** It has been known for some time that the weight was in relation to certain menstrual disorders. Evans and Strong reviewed a series of 187 patients with obesity, treated with low caloric diets and found a loss of 5659 pounds with an average duration of dieting of 8.7 weeks.

They found in more than half their cases a more abundant flow and less menstrual discomfort after weight reduction. They cite several cases in point.

They write that, "Observations of this character suggest that excess weight and menstrual disorders are not the result of a primary endocrine imbalance. On the contrary, the menstrual disorder, which is the principal index of the alleged endocrine imbalance, is probably due to a faulty nutrition with its inevitable resultant faulty metabolism at a physiologically impressionable period of the patient's life."

Comment: It has not been definitely proven whether the menstrual disorders in fat women are due to a primary endocrine imbalance or to faulty nutrition. However, there is no question but what proper regulation of weight by dietary regime has profound influence in certain menstrual disorders, and also in the vaso-motor symptoms which accompany them.

—Wendell Long.

**Analysis of 100 Cases of Ruptured Ectopic Gestation: Technic and Evaluation of autohemofusion.** By James V. Ricci, M.D., and Salvatore Di Palma, M.D., New York, N. Y. *American Journal of Obstetrics and Gynecology*. Volume XXII, December, 1931.

The authors have presented a statistical survey of 100 cases of ruptured ectopic gestations and have tabulated the types of menstrual disorders, the pain element in diagnosis, the leukocyte counts, the erythrocyte counts, the analysis of the deaths and a comparison of mortality rates. This has all been a basis for a discussion about the merits of autohemofusion in desperately ill patients with ruptured ectopic pregnancy and free blood in the peritoneal cavity. They point out that, though rarely indicated, when needed it is an invaluable procedure. They emphasize that the method should be reduced to the utmost simplicity. Their method, in brief, entails the administration of intravenous saline solution to which is added the

free blood in the peritoneal cavity after mixture with sodium citrate solution and straining through 12 layers of gauze saturated with citrate.

They point out the fact that this is a particularly useful procedure in situations where the elaborate organization of a large hospital is not immediately available in the treatment of such a catastrophe as a peritoneal rupture of ectopic pregnancy with great blood loss. They have coined the term autohemofusion as opposed to autotransfusion.

Comment: While it has never been necessary in our experience to utilize this method, unquestionably there are certain cases of ruptured ectopic pregnancy with such terrific blood loss that immediate replenishment of the blood volume is essential in order to preserve life. If the means for proper cross matching of the blood is not available in a reasonably short time, this procedure would seem to me to be a rational, life saving process.

—Wendell Long.

**Clinical and Experimental Basis for Surgery of the Pelvic Sympathetic Nerves in Gynecology.** Rene Fontaine, M.D., and Louis G. Herrmann, M.D., Strasbourg, France, *Surgery, Gynecology and Obstetrics*, Vol. 54, Page 33.

These authors have published a very comprehensive review from the well-known Leriche Clinic upon the pelvic sympathetic nerves. They have outlined carefully both macroscopic and microscopic anatomy of the nerves of the female sex organs and have reviewed at some length the physiology.

They have given as the indications for operations: Group A, those cases in which no organic lesion of the genital organs can be found to account for the pelvic pain, i. e., functional dysmenorrhoea.

Group B, those cases with slight pathological processes in the pelvis which do not react favorably to ordinary gynecological treatment, i. e., sclerocystic degeneration of the ovaries; persistent pelvic pain following some previous operation.

Group C, those cases in which the pathological lesion is known but which has been found to be too extensive for surgical removal, i. e., inoperable neoplasms in the pelvis giving rise to severe pain.

They outline the types of operation employed:

- a. Section of the superior hypogastric plexus (presacral nerve).
- b. Section of the ovarian nerves.
- c. Peri-arterial sympathectomy of the internal iliac artery.
- d. Section or removal of the lower part of the lumbar sympathetic chain of one or both sides.

They give a general review of the results obtained, together with case histories from a number of patients.



They outline the technique of the various operations of sympathectomy.

They feel that in many cases of intractable dysmenorrhoea, resection of a portion of the hypogastric plexus (presacral nerve) is decidedly beneficial in a large majority of cases. They point out that disturbances of micturition following such operations have been rare in their experience. They discount any feeling that function has been impaired and report that the menstrual cycle and the ability to have children has been unchanged after this procedure.

They feel that in incurable carcinoma of the pelvis associated with severe pain, extensive sympathectomy is justifiable in light of the complete relief of pain afterward, provided the extension of the carcinoma into the nerve roots has been eliminated as a cause for that pain.

—Wendell Long.

### CLINICAL CONSIDERATIONS

In recent years there has been a tremendous increase in the number of head injuries. It is important to the general practitioner, the surgeon and the neuro-surgeon that there be some established, adequate method of treatment based upon a definite understanding of the symptoms involved in cerebral trauma.

In April of 1931, I, with the other members of the Southern Society of Clinical Surgeons, visited Dr. Temple Fay in Philadelphia. During our visit there he gave us his plan of treatment for these injuries. It is the most clearly outlined and logical plan of which I am aware. During the past year I have employed it constantly with gratifying results. The careful and adequate management of the details concerning the immediate control of shock and intra-cranial pressure have rewarded us by a definite diminution in mortality.

Too frequently long delays occur, in the attempted suturing of the scalp, in the futile attempt to obtain X-ray examinations at a time when they are not indicated and not necessary, and in the delay associated with assembling the necessary requirements for lumbar puncture, examinations and operation, when a clear cut program of treatment has not been visualized.

The doctor must recognize the fact that death from a head injury is not due to the fracture of the skull, but is brought about by the changes in physiologic relationships within the cranial cavity, because of pressure, haemorrhage, or cerebral edema, secondary to the trauma. Our problem involves the appropriate management of cerebrospinal fluid, cerebral edema, and consequent intracranial pressure, as well as treatment directed toward the haemorrhage by either direct or indirect methods.

There are two indications for operation:

- a. Compound or comminuted fracture of the skull, with extension into the cerebral substance.
- b. Depressed fracture sufficiently large to cause pressure and encroachment upon important cerebral areas.

Decompression has been abandoned, and whenever an operation is done it is for the purpose of exploration for complicating subdural or epidural haemorrhage. Operation is undertaken only when all other measures have failed or definite focal signs indicate that a subdural or epidural clot exists in conjunction with the generalized cere-

bral edema and brain laceration. Trephining the skull does not relieve intra-cranial pressure any more than a single spinal drainage. Bloody spinal fluid is a contraindication for operation. As a rule it is better to delay exploration until after intra-cranial pressure and cerebral edema have been adequately controlled. When it has been impossible to control cerebral edema and pressure by all other measures then it has been our experience that operation has also failed. There is no justification in early operation as previously practiced with its unquestionably high mortality.

The care of these acute head injuries may be classified into the following periods:

1. Period of shock.
2. Period of emergency treatment.
3. Period during the first twenty-four hours after admission.
4. The ten day period of recovery.
5. Post-traumatic considerations.
- I. Period of shock:

The evidences of shock are as follows:

- a. Subnormal temperature.
- b. Cold clammy extremities.
- c. Low diastolic pressure, especially below 60.
- d. Pulse usually above 120.
- e. Increase in the respiratory rate.
- f. At times a rising pulse pressure.

#### II. Period of emergency treatment:

- a. Warm dry clothing, heat applied to the body surfaces.
- b. Atropin sulphate, grain 1-100 (adult dose). Pituitrin, surgical, 15 minims by hypodermic. Strychnine, grain 1-30, by hypodermic.
- c. Ergot and ephedrine if necessary.

The stimulants are directed toward vaso constriction of the peripheral circulatory bed, thus improving diastolic pressure, favoring better oxygenation and correcting the vaso-motor dilatation associated with shock.

1. Immediate intravenous administration of 50% glucose. The purpose is to draw from the tissues the fluid needed for blood volume, thus replacing from the patient's own tissues the needed amount. It is usually not necessary to give any normal saline except when the shock is very severe. A minimum amount of fluid by mouth may be given during the period of shock. The period of shock is usually considered over when the temperature returns to normal or above and when the pulse diminishes to about 120.

2. Control of the bleeding points of the scalp, inspection and cleansing of the wound and simple dressings to meet the immediate requirements. No attempt to suture the wound and no immediate operative measures undertaken until the period of shock has entirely disappeared. Immediate X-ray is not considered.

Every effort should be directed toward the immediate treatment of shock and the subsequent intra-cranial pressure which will ensue.

3. During this interval temperature, pulse, respiratory and blood pressure is recorded every fifteen minutes. The necessary stimulants are repeated or amplified as the indications may require.

4. As soon as the period of shock has passed, spinal puncture is done. At this time the patient

may have a careful neurological examination done.

The subsequent program of treatment depends upon the character and pressure of the spinal fluid. If the fluid is clear, measures directed entirely toward the subsequent control of intracranial pressure are indicated, with careful and frequent observations of the patient's neurological signs, to determine the possible presence of subdural or epidural haemorrhage. Remember that the subdural and epidural spaces do not communicate with the subarachnoid space, and for this reason a large haemorrhage may occur without evidence of blood in the spinal fluid.

If the spinal fluid is bloody the pressure is taken and all of the fluid which can be obtained (with the patient in the recumbent position) is drained from the spinal canal, both for the purpose of reducing intra-cranial pressure, preventing immediate subsequent pressure and also with the hope of removing as much blood as possible. With bloody spinal fluid operative exploration is not warranted, because combined subarachnoid and subdural haemorrhage seldom occur. Blood in the spinal fluid produces obstruction to the outlet of cerebro spinal fluid and thus for a period of ten days at least, spinal fluid must be withdrawn from time to time to prevent over accumulation. When blood is present in the spinal fluid, laceration of the brain, as well as the presence of blood itself, tends toward producing irritation, edema, and swelling, and the necessity for dehydration throughout the ensuing days is imperative, so as to permit adequate circulation of arterial blood within the cranial cavity, and preserve function of the important cerebral centers that otherwise would suffer for the lack of oxygen, in the presence of edema and pressure.

III. Considerations during the first twenty-four hours after admission:

With period of shock over, attention must be directed toward maintaining blood pressure and the control of intra-cranial pressure, as well as the subsequent dressings, or surgical debridement and reconstruction of the areas of laceration.

The importance of preventing restlessness and insuring quiet cannot be over emphasized, so as to prevent further cerebral bleeding and intra-cranial pressure, from violent efforts made on the part of the patient. Morphine should be avoided because it depresses the respiratory center and frequently complicates this phase of the picture. Sodium luminol, grain 2, by hypodermic, and chloral hydrate, grain 15, with sodium bromide, 30 grain (adult dose), is given by mouth and repeated every four hours if necessary. If necessary the chloral and bromide may be given by rectum (double the above amount) in 4 ounces of hot tap water. The following routine orders are then initiated:

1. Elevation of the foot of the bed.
2. Temperature, pulse and respiration recorded every fifteen minutes.
3. Blood pressure recorded every half hour.
4. The pulse pressure (the difference between the systolic and diastolic blood pressure) is charted separately with the pulse every half hour.
5. Ice pack to the head.
6. Complete blood count.
7. Typing of the patient's blood.
8. Routine urine examination.
9. Fluid intake and output are carefully measured and charted, and the total fluids allowed as follows:

a. If the spinal fluid is clear, subsequent spinal drainage is unnecessary. Total fluids are therefore restricted to 20 ounces in twenty-four hours (by mouth or rectum).

b. If spinal fluid is bloody and repeated spinal drainage is to be done, the total fluids are limited to 30 ounces in twenty-four hours.

If the fluid intake is limited to 20 ounces, practically no spinal fluid can be obtained after the second day. The intra-cranial pressure will be thus controlled for the ensuing period and the cerebro spinal fluid system placed at rest, giving the maximum amount of cranial volume to the needed arterial circulation, which is concerned with oxygenation of the brain and repair of the injuries.

It is evident that if repeated spinal drainages are to be performed, with the object of draining the bloody fluid, and assisting in its elimination, sufficient spinal fluid must be obtained at each drainage. Usually from 45 to 65 cc. of spinal fluid can be obtained by lumbar puncture every twenty-four hours when the total fluid intake has been placed at 30 ounces.

With the blood pressure records every half hour and the pulse pressure relationship with the pulse rate determined, as well as exact knowledge as to intake and output, the clinician is in a position to rationally control the patient's intra-cranial pressure.

Should the pulse persist over 120 another intravenous injection of 50 cc. of 50% glucose may be given in four hours. If the pulse pressure shows a tendency to rise or approach the pulse rate, the indications for further relief of intra-cranial pressure are thus established, and another spinal puncture and drainage are necessary, or an enema of magnesium sulphate may be given to further enhance the dehydration. Still more effective dehydration can be accomplished by the introduction of 50% glucose intravenously, followed in one hour by magnesium sulphate by mouth or rectum. Magnesium sulphate should never be used in the presence of shock.

The most important consideration toward which all treatment is directed is the maintenance of adequate oxygen supply to the centers of the brain concerned with life, as well as the temporarily disrupted cortical mechanism, so that when the period of stupor and immediate injury is over, there will be a re-establishment of cortical function rather than the massive loss of highly specialized cells sacrificed during the period of anoxemia and pressure and consequently producing the final post-traumatic signs of mental deterioration, loss of initiative, attention and general mental acuity.

In order that oxygen be properly delivered to the tissue cells throughout the body, it is necessary to maintain diastolic pressure at 60 mm. of mercury at all times. This is done by constricting the peripheral vascular bed, and seldom is it necessary to stimulate the heart itself.

IV. Considerations of the following ten day period of recovery:

With the period of shock and immediate pressure controlled X-ray studies of the skull may be made for a permanent record. Spinal drainage is continued daily or oftener if blood is present in the spinal fluid. Careful neurological studies are made daily. Should focal signs be present and the patient's general condition satisfactory, immediate exploration is delayed until the intra-cranial pressure phase has passed and the period



of subarachnoid haemorrhage is over. Operative exploration, when indicated, is best accomplished after the seventh or tenth day, should other signs and symptoms remain satisfactory.

The patients are maintained on the fluid level allotted to them until the seventh to tenth day, when, if the spinal fluid is clear, the intake is gradually raised and the patient is finally placed on 32 ounces of total fluid as the maximum. Where spinal fluid is bloody, the level of 30 ounces is maintained during the period of drainage.

#### V. Post-traumatic considerations:

The patient is discharged from the hospital with the caution that he must not exceed 32 ounces of total fluid during the ensuing three months. He is placed on a dry diet and advised to avoid sweets and salty foods. The latter not only helps to control the thirst caused by the restricted fluid level, but prevents water shortage in the tissues and maintains a better water balance without periods of overloading.

It has been a striking fact to note that the former post-traumatic headache, dullness, loss of attention and disturbance in concentration have been an unusual rather than a usual finding. This is ascribed to the control of the fluid balance. Patients have themselves reported that when they exceed the fluid allotment or diet program, they felt dull, had headache and had themselves returned to their former balance, because they "did not feel so well when they took more fluid." Indulgence in alcohol has caused complaint of the same return of symptoms.

It is thought that an acute brain injury treated in this way may safely return to activity within three or four months, whereas formerly from six to nine months were required to adjust a patient to his economic surroundings, and frequently the traumatic neurosis produced partial or permanent disability.

—LeRoy Downing Long.

## UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.  
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**Study of Prostatic Secretions and its Relationship to Malignancy.** S. W. Mulholland, M.D.  
Extract: Proceedings of the staff meeting Mayo Clinic, December 16, 1931.

That cellular elements are found in secretions that accompany malignancy has been known for many years. The secretions studied were from the pleural and abdominal cavities. Smears from these secretions should fairly constant endothelial like cell, or plaques of epithelial cells.

Reasoning from the above results, dominant types of cells should be found in a carcinomatous prostate's secretions.

One hundred cases of prostatitis were studied, four smears from each case were stained with Wright's stain, and studied. The following cellular elements were present: Polymorphonuclear leukocytes, large and small lymphocytes, other phagocytes spermatozoa epithelial cells, microorganisms, and non-nuclear elements, consisting of lipid globules and mucous.

Thirty cases of known carcinomatous prostates were used as comparison. The secretion being

stained with Wright's stain. Leukocytes the predominating cells in prostatitis were absent. The dominant cells were of two types. Both types of cells, nuclear material were acidophilic in contrast to Bosophilic in leukocytes of prostatitis. One type was a cell two to three times the size of polymorphonuclear leukocyte. Nucleus one-third size of body of cell, round, and centrally located. This type of cells had been packed together, causing marked variation in cellular outline. Examination of the secretions revealed this type of cell in 77% of the cases as 23 out of 30 cases.

The other cellular elements were epithelial cells that occur either singly or in large plaques. The nucleus was one-eighth to one-tenth the size of the body of the cell.

Although these cells tend to occur in clumps, and to be held together by bits of mucous, they were never seen in plaques which were quite typical of pavement epithelial cells.

Infection tends to mask this picture, and typical smears are taken from patient who had been diagnosed early.

Doctor W. C. MacCarty in discussing Doctor Mulholland's paper says:

"I thought in connection with Doctor Mulholland's presentation, we might review the criteria by which we say that a cell is malignant. Carcinoma of the prostate may be of two types. 1. Scirrhus. 2. Carcinomatous. The latter in which there is a proliferation of the cells in the acini and a piling up of these cells, it is easily possible for these cells to be exfoliated and expressed in the urethra. Therefore the secretion from this type of carcinomatous prostate would have degenerating carcinomatous cells. I have read Doctor Mulholland's thesis and he has never said that these cells that he described were carcinomatous. I feel however if he keeps on looking he will find carcinomatous cells in perfect condition instead of the exfoliated degenerated ones he describes."

**Experimental Study of Early Syphilis with non-Specific therapies.** Martin F. Engman, M.D., L. H. Jorstal, M.D., M. F. Engman, M.D. Journal A. M. A., November 21, 1931.

It has been known for a number of years that patients with neuro syphilis, are favorably affected by the rise in body temperature. Some cases are favorably affected with non-specific protein therapy.

Working from the assumption, we selected 29 cases all in primary and secondary stages. These patients were submitted to a form of treatment which consisted of a combination of agents each which is supposed to stimulate non-specific forces in animal organisms.

In the first group of eleven cases there was given an intramuscular injection of a 1% solution of mercuric chloride in physiologic salt solution. This was not given from the standpoint of specific treatment but with the idea in mind of a possible non-specific stimulation of the defense organisms of the body for this reason we chose the height of the temperature rise as a probably most suitable time for the injection.

The 29 cases were divided into three groups and treated according to the schedule given below.

**First Group:** (1) K. I. Sat. Sol. gts. X t. i. d. (2) Thyroid gland extract gr. ½ t. i. d. (3) Thyroid vaccine—initial dose 50 M.—increased 50M—Cach

dose, unless fever goes above 103, then just enough for fever 102 and 103. This is given intravenously. (4) 1 cc. mercuric chloride—1% intravenously at height of fever. (5) Quartz lamp treatment as soon as temperature returned to normal following injection of vaccine.

**Second Group:** Same as group one except that mercuric chloride injections were omitted.

**Third Group:** Same as number two, except high carbohydrate diet; and spiritus frumenti was taken during the fever.

Twenty-nine cases either primary or secondary were used as test cases with the following results:

**Serological**—22 cases—76% showed serological improvement. Kahn reaction drop from 240 to 20 to the end of treatment—most remained at 20 reacting units. 7 cases—24% showed no serological improvement.

**Clinical**—Clinical improvement did not always agree with serological. 62% did well clinically—38% unsatisfactorily.

**Serological and Clinical improvements.** 16 cases or 55% improved serological and clinical; 6 cases or 20% serological but not clinical; 2 cases or 7% clinical but not serological; 5 cases or 17% neither serological or clinical.

**Analysis of the three groups separate.** Group 1.—11 patients average of 13 injections all improved serologically—one case showed no clinical improvement.

Group 2.—14 injections; 8 patients, 5 serologic improvement; 4 improved clinically; 2 showed serologic but not clinical; 1 case showed no improvement serologic or clinical.

Group 3.—7 injections; 10 cases—shortest amount of treatment.; 6 serologic improvement—only 2 of these showed clinical improvement; 4 cases neither serologic or clinical.

After this treatment patients were referred to clinic to receive routine syphilis treatment.

#### CLIPPINGS FROM THE UROLOGIC AND CAUTANEOUS REVIEW

**Primary Syphiloma in the Female Urethra.** Pier G. Bortolucci (La Riforma Medica, June 8, 1931) describes a case of a woman of thirty-one who complained of pollakiuria and pain on urination. She also had intermittent headaches as well as a persistent fever. The fact that she had maculocutaneous spots led to an examination of the blood with a resultant positive Wassermann. Examination of the genitals revealed a chancre in the urethra which was the cause of the pollakiuria and painful micturition.

**Influence of Baths on the Passage of Anti-syphilitic Agents into the Spinal Fluid.** W. M. Werzilow, A. R. Chougame and K. M. Freydine (Annales de Dermatol. et de Syphil., July, 1931) make the observations regarding their investigations on the influence of balneotherapy on the penetration of anti-syphilitic remedies into the spinal fluid that:

1. Bismuth enters the cerebrospinal fluid in experimental and control animals.

2. The greater the dose of bismuth and the greater the concentration of H<sub>2</sub>S in the bath the greater the amount of bismuth in the spinal fluid.

3. The simultaneous introduction of neosalvarsan greatly increases the penetration of bismuth into the spinal fluid.

As regards the penetration of arsenic into the cerebrospinal fluid there is difference of opinion but the authors believe that it is even greater than with bismuth, in some of their findings even twice the quantity.

**Prostatic Hypertrophy.** Speaking of the indications and contraindications for operation for hypertrophy of the prostate, G. Marion (Minerva Medica, July 14, 1931), summarizes his views in the following way:

1. A patient who needs repeated catheterization should be operated. No matter how scrupulous the asepsis, sooner or later infection will ensue.

2. In patients who do not require repeated catheterization the question of operation will depend upon whether the symptomatology is undergoing progressive aggravation.

3. Even if the symptomatology of hypertrophy is not severe or of progressive aggravation, operation may be necessary if the hypertrophy is the cause of recidive complications.

4. Operation is necessary if palpation reveals a hard mass, indicating epitheliomatous transformation, regardless of the degree of hypertrophy or the age of the patient.

5. Tuberculosis, cancer, and all severe chronic diseases are contraindications to operation, but not so diabetes.

6. The patient's age is a factor in the consideration as to operation. Very advanced age is a contraindication to prostatectomy.

7. The patient's general condition must be studied carefully—heart, liver, lungs, etc. A deficient renal function is a contraindication to operation. Pyelonephritis, so frequent in prostatics, is not contraindication. The Ambard constant is an index of major value in determining renal functionality. So also is a study of phthalein elimination.

8. There are no contraindicating factors to operation on the part of the bladder.

9. Patients who are unfit for operation should first be made into fit condition as much as possible before operation is undertaken.

**Treatment of Gonorrhea and Erections.** Erich Langer, Medizinische Klinik, Nov. 31, 1931), observes that our treatment of gonorrhea is based on the one hand of destroying the infection as rapidly as possible, and on the other hand, of avoiding any irritation which may give rise to complications or prolongation of the disease. In men the difficulty arises of keeping the entire urogenital system at rest and avoiding complications in the adnexal organs. To overcome erections and pollutions is a difficult problem not only because they themselves maintain congestion and irritation but because they are brought about by various, even psychic, factors. Consequently erotic influences must be overcome for which purpose dietetic measures will be of some use. Alcoholics and spicy food are to be avoided. Restriction of fluids at night and regular evacuation of the bladder and bowels tend to prevent erections. In addition sedatives have to be prescribed, usually in the form of bromides. The author has not seen any special value in atropin and belladonna.



## DERMATOLOGY AND SYPHILOLOGY

Edited by James Stevenson, M.D.  
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### Observations on the Formation of Wheals. IV.

The Influence of Calcium Concentrations on Histamine Wheals. V. The Affects of Variation of the CO<sub>2</sub> Combining Power of the Blood on Histamine Wheals. Wever, W. K., Alexander, H. L., and McConnell, F. S. Journ. Clin. Incest: II:195-209 (Jan. 1932).

The above two articles are a continuation of the work previously reported by the authors in their experimental work on allergy. They state that the wheal produced in allergic urticaria results from contact between the introduced allergen and its specific antibody in the tissues, such contact giving rise to histamine or a histamine-like substance, and that the latter is the cause of the localized edema. In their experimental work experimental wheals were produced by the intra-dermal injection of I: 10,000 histamine acid phosphate solution, alone, or in combination with other substances. It was found in these experiments:

1. That calcium possesses the power of enhancing the size of histamine wheals, but only in a definite zone of concentration, varying between the limits of I: 10,000 and I: 1,000,000. In most cases the optimum calcium dilution was I: 100,000. Why calcium outside these limits, seems incapable of enlarging the wheals is not explained.

2. The ingestion of acid in the form of ammonium chloride diminishes the size of histamine wheals, while the ingestion of sodium bicarbonate increases the size. Alkalization by the ingestion of sodium citrate was not accompanied by an increase in the size of the histamine wheals. While it is tempting to consider these phenomena on the basis of changes in calcium ion concentration, the conditions existing in the tissues are too little known to justify this conclusion.

### The True Sugar Content of the Skin in Diabetes.

Trimble, Harry C. and Carey, Benjamin W. Arch. Dermat. and Syph. 25:6 (Jan. 1932).

Specimens of skin from diabetic and non-diabetic patients were taken fresh from the operating room and examined for total reducing substances, and also, by a new method for dextrose alone. The chemical methods used are to be described in another article. In the non-diabetic patients the true sugar content of the skin averaged 56 mg. per hundred cubic centimeters, while in the diabetic group it averaged 144 mg. at a time when the average concentration in the blood was 226 mg. per hundred cubic centimeters. The data shows that an elevation of sugar in the blood is accompanied by an increased quantity of true sugar in the skin; also that the two tend to parallel each other.

### Chemical and Electrolytic Lesions of the Mouth Caused by Artificial Dentures.

Lain, E. S. Arch. Dermat. & Syph. 25:21 (Jan. 1931).

In a number of cases of stomatitis and glossitis in patients wearing full plate dentures and in whom no apparent etiological factor was found,

on the basis of some experiments, the author found if dissimilar metals were used in the dentures from 1 to 40 degrees of galvanic current were registered on a micro-ammeter. He suggests therefore that these lesions were electrolytic in origin. In several other cases analyses of the plates revealed the presence of free metallic substances or undercuring with porosity.

### Mycosis Fungoides as a Clinical and Pathologic Non-Existent.

Symmers, Douglas. Arch. Dermat. and Syph. 25:1 (Jan. 1932).

The author believes that mycosis fungoides is a cutaneous manifestation of systemic disease. From postmortem and histologic observations he believes it is the expression of at least three different diseases of the lymph nodes system; Hodgkins disease, a round celled sarcoma, and lymphosarcoma.

## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
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### Placental Hormones.

Collip, J. B., Canad. M. A. J 23:631, 1930.

This author reports a sex hormone, emmenin, which he prepared from the placenta and which produces precocious sexual maturity in young rats. Its action is similar to the anterior pituitary sex hormone, prolan, isolated by Zondek.

### Carbohydrate Metabolism in Mongolian Idiots as Evidence of Endocrine Dysfunction.

O'Leary, W. D. Am. J. Dis. Child 41:544, 1931.

O'Leary determined the sugar tolerance of eighteen mongolian idiots and confirmed Timme's claim of the presence of pituitary hypofunction in this condition.

The untreated cases gave curves indicative of a very high sugar tolerance, whilst in those receiving pluriglandular therapy the curves were low, some simulating a diabetic phase.

### The Cause of Obesity.

Newburgh, L. H., J. A. M. A., 97:1559, 1931.

This author, after a very careful study of obesity based upon the measurements of total heat production and water exchange, concludes that there is no specific metabolic abnormality and that all obesity is "simple obesity." The increase in weight merely represents an energy inflow greater than the outflow. He states that failure of the primitive instinct to adjust the inflow of energy to the bodily needs is always the immediate cause of both leanness and obesity.

Comment: I agree with Barborka (Med. Clin. N. A. 14:701, 1930) that, whatever the mechanism of obesity may be, the clinical fact remains apparent that two persons on the same intake and output may vary in response, one getting fat and another remaining thin. Underweight in the otherwise healthy person also occurs even when the intake of calories is more than sufficient to supply the demands for energy.

The difference between the so-called "exogenu-

ous" and "endogenous" types of obesity is only one of degree, not of kind, and both are the result of disturbed metabolism, which in the last analysis is probably due to some glandular dysfunction which alters the relation between intake of food and expenditure of energy.—H. H. T.

**Head Injuries—Adrenal in Sound Test.** Muck, O., *Klin. Wchnschr.* 37, 1931. *Abst., Ars Medici, Vienna.* 13:558, 1931.

This test, first suggested by the author several years ago and based upon vast experimental material, depends upon the reaction of the mucous membranes of the nose after the application of adrenalin and then irritating with blunt object. A white streak develops and persists in persons suffering from a cerebral lesion. This test, if proven to be acceptable, will be of great value in general medicine and especially in industrial cases.

Not all patients who constantly complain of ailments without it being possible to demonstrate objective neurological symptoms of disease are neurotics craving for sick pay.

**Treatment of Ovarian Deficiency with Ovarian Extract (Oestrin).** H. Gardner Hill and J. Forest Smith. *Lancet* I, No. 9, 464.

These authors used water soluble ovarian preparation standardized to ten rat units per 1 c.c. Three types of cases were studied:

1. Primary amenorrhea—Individuals who had passed the normal age of puberty without any signs of the onset of menstruation.

2. Primary menstrual irregularity—Individuals in whom menses had never occurred from the onset at less than 3 to 4 month intervals.

3. Secondary amenorrhea—Individuals in whom amenorrhea developed after some years of normal menses.

Gross pelvic disease was eliminated in all.

The majority of the patients in group one presented some abnormality or delay in bodily development suggestive of anterior hypopituitarism. One was typically eunuchoid.

In group two the majority showed minor stigmata of endocrine or metabolic abnormality. Some were obese, others underdeveloped. Some had goiters.

In the third group all were more or less normal except for menses. None appeared due to any definite or active disease such as thyrotoxicemia, hypoinsulinism or pituitary tumor.

First group—No results, though as much as 540 r. u. given.

Second group—Six out of nineteen cases benefited.

Third group—54% benefited. In two of these, who were sterile, pregnancy subsequently occurred.

**Ephedrine Circulatory and Glycemic Reactions in the Psychoses.** Appel K. E. and Palmer, H. D. *Arch. Neurol. and Psychiat.* 27:159, 1932.

It has long been known that certain neurovegetative disturbances accompany affective reactions and that the affective conditioning of visceral responses has been the basis for most

objective psychiatric diagnostic procedures. Chief use has been made of the pharmacodynamic tests employing atropine, pilocarpine or epinephrine as a means of demonstrating the relative hypertonicity or hypotonicity of one or the other divisions of the vegetative system. These authors injected ephedrine hydrochloride into a group of manic depressive psychoses of various phases. The schizophrenias here considered include the hebephrenic, catatonic and simple types, or those which are sometimes classified as the affectless reactions. Their results were in accord with the findings of other investigators:

Ephedrine hydrochloride, in this series of cases, administered intravenously produced a tremendously greater blood pressure rise in the manic-depressive patients than in the schizophrenic or normal group. In the manic-depressive group it produced an average blood sugar curve showing an initial fall below the fasting level, a temporary rise reaching a maximum at fifteen minutes, and a secondary fall below the fasting level with a delayed rise toward the end of the two hour period. In the schizophrenic group the same dose of the drug produced a marked elevation of blood sugar. In the normal person the curve is diphasic.

They found a similarity of the blood sugar curves obtained in the schizophrenic group to the curves obtained by them in persons suffering from evident endocrine imbalance, and state that such a resemblance raises the question as to whether endocrine dysfunctions have anything to do with the physiologic response in dementia praecox.

They conclude that the indications seem to be that the manic-depressive patient shows a hyperirritability of the sympathetic, which is interpreted as an affectively conditioned sympathetic hypertonus, a reaction pattern fixed in the neural organization by habitual emotional impressions. The schizophrenics show a relatively inert sympathetic system as estimated by ephedrine stimulation.

**Disturbances of Circulation in the Legs.** Allen, A. W. *New Eng. J. of Med.*, Nov. 17, 1931, *Abst. Ars. Medici, Vienna*, 10:30 (Jan.), 1932.

In cases of intermittent claudication, Raynaud's disease, etc., Burger's exercises have often produced excellent results; legs raised to an angle of 45 degrees until the feet are blanched (about two minutes), then the legs hanging down until the feet become cyanotic and painful (one to three minutes). This exercise should be repeated three to six times at a sitting with intervals of five minutes during which the patient must lie absolutely still with his legs warmly wrapped up; the sittings should be repeated two to four times daily. In addition slight gymnastic exercises for the legs.

## BOOK REVIEWS

**Female Sex Hormonology.** By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School; Surgeon-in-Chief to the Free Hospital for Women and to the Parkway Hospital, Brookline, Massachusetts. 131



pages, with illustrations. Philadelphia and London: W. B. Saunders Company, 1931. Cloth, \$3.50.

**Psychology and Psychiatry in Pediatrics: The Problem.** Report of the sub-committee on Psychology and Psychiatry, Bronson Crothers, M.D., Chairman. White House Conference on Child Health and Protection. The Century Company, New York and London. Cloth, Price \$1.50.

**Health Protection For The Preschool Child.** A National Survey of the Use of Preventive Medical and Dental Service For Children Under Six. Report to the Section on Medical Service, George Truman Palmers, Dr. P. H., Chairman, Sub-Committee on Statistics, Mahew Derryberry, Research Assistant, Philip Van Ingen, M.D., Chairman, Committee on Medical Care for Children. White House Conference On Child Health and Protection. The Century Company, New York and London. Cloth, Price \$2.50.

**The Surgical Clinics of North America.** (Issued serially, one number every other month). Volume 11, No. 6. (Philadelphia Number—December, 1931). 309 pages with 87 illustrations. Per Clinic Year (February, 1931, to December, 1931.) Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

There will be found elsewhere in this issue an article by Dr. Temple Fay on "Head Injuries."

Among other articles of special interest to surgeons are: "Modern Tendencies in the Treatment of Fractures," by Doctors Eldridge L. Eliason and Walter W. Ebeling; Bronchoscopic And General Surgical Clinic of Drs. Chevalier Jackson and W. Wayne Babcock provides "Laryngectomy For Carcinoma of The Larynx"; "Hematoma Auris"; "Intrathoracic Ganglioneuroma"; "Retroperitoneal Ganglioneuroma"; "Intussusception"; "Elephantiasis of The Right Leg"; "Anthrax Pustule of The Forearm"; "Electrically Lighted Retractors"; "Paravertebral Extrapleural Thoracoplasty," is presented by Dr. John B. Flack.

There are many other articles in this issue of great interest to the surgeon as well as the general practitioner.

**A Text-Book of Clinical Neurology.** By Israel S. Wechsler, M.D., Professor of Clinical Neurology, Columbia University, New York; Attending Neurologist, Neurological Institute and The Montefiore Hospital, New York City. Second Edition, Revised. 759 pages with 142 illustrations. Philadelphia and London: W. B. Saunders Company, 1931. Cloth, \$7.00 net.

Textbooks on Neurology are rather rare compared to those issued on other subjects. This issue of Wechsler is a considerable improvement over the previous edition and has a rearrangement of the subject matter more fitting to the problems considered. We consider this a very useful book for the general practitioner.

**Courts and Doctors.** By Lloyd Paul Stryker. The MacMillan Company, New York, 1932. Cloth, 236 pages.

Suits alleging malpractice are the most irritating things confronting the physician. Notwithstanding the fact that they are nearly always baseless, often born of the basest ingratitude, they call for prompt, sensible and energetic de-

fense. Every physician should know the fundamentals of medical law and his legal responsibility with reference to the cases he undertakes to handle. Perhaps few men are in better position than Mr. Stryker, who for many years was general counsel for the New York Medical Society to state the case. Dr. Charles Gordon Heyd, President of the Medical Society of New York notes that the State had approximately 12,500 physicians and that in 1930, there were 256 more malpractice suits brought against the members than in 1929. The reason for this is almost obvious—depression, hard times, and the desire to evade payment, naturally stimulate such suits. It must be admitted that we do have cases of malpractice, but, as a rule, they are rare, and the physician is found giving the average grade of medical and surgical service demanded or set as a standard in the community in which he resides.

This volume is divided into seven parts, the parts in turn being subdivided into various subjects. These parts considered are: The Practice of Medicine, The Relationship of Patients and Physicians, The Action of Malpractice, Defenses To Actions For Malpractice, Expert Testimony, The Doctor On The Witness Stand, The Doctor And The Criminal Law.

Perhaps the last one is more important than any of the others for it is a matter of fact that physicians almost daily violate the law in some small matter, however, with no intent to commit a violation. This part takes up Assault, Abortion, Contraception, Narcotics, Prescription of Liquor, Practicing While Intoxicated, False Certificates of Health, and Conclusions.

The writer believes every physician of Oklahoma should possess and read this book.

**Conquering Arthritis.** By H. M. Margolis, M.D. Cloth, Illustrated, 192 pages. 1931, The MacMillan Company, New York.

**The Human Voice, It's Care And Development.** By Leon Felderman, M.D. Cloth, Price \$2.50, 301 pages. Henry Holt and Company, New York, Publishers.

#### DALLAS SOUTHERN CLINICAL SOCIETY

According to present indications, all medical roads in the South will lead to Dallas for the week of March 28th to April 2nd, for the Fourth Annual Spring Clinical Conference of the Dallas Southern Clinical Society. A handsomely illustrated "Prospectus" outlining the work offered at the Conference, was sent out in January to 21,000 doctors, not only in the South but also throughout the United States and foreign countries.

The annual Spring Clinical Conference is planned to carry out the purpose of the Dallas Southern Clinical Society, namely, "To make available to the medical profession of the South, the post-graduate teaching material of Dallas." In brief, twenty of the outstanding men of medicine and surgery in the United States, will be brought to Dallas to appear in addresses in general assemblies, and in hospital clinics, while a most comprehensive course of 96 hours of post-graduate instruction will be offered by the Society's local members, along with other features. Thus a registrant will have literally "brought to his door,"

right in the South, medical information and training which would require weeks and months of time, and thousands of miles of travel, to secure by other means.

The first three annual Spring Clinical Conferences at Dallas have been generously supported by Southern doctors, with a total registration of over 1100 in 1931. The 1932 session will be bigger and better than ever; more invited guests are being brought; more round-table luncheons will be included; the program has been wonderfully co-ordinated to eliminate conflicts between post-graduate courses and hospital clinics; and yet the all-inclusive registration fee has been kept the same—ten dollars.

The following distinguished guests will be heard in addresses, hospital clinics and evening symposia:

Dr. Thos. McCrae, Philadelphia, Internal Medicine; Dr. Samuel A. Levine, Boston, Cardiology; Dr. Albert H. Rowe, Oakland, Allergy; Dr. Thos. R. Brown, Baltimore, Gastro-enterology; Dr. Karl A. Menninger, Topeka and Boston, Neuro-Psychiatry; Dr. Udo J. Wile, Ann Arbor, Dermatology; Dr. W. McKim Marriott, St. Louis, Pediatrics; Dr. Lee W. Dean, St. Louis, Pediatric Otolaryngology; Dr. Joseph C. Beck, Chicago, Otolaryngology; Dr. Wm. L. Benedict, Rochester, Minn., Ophthalmology; Dr. Frank H. Lahey, Boston, General Surgery; Dr. Shelton Horsley, Sr., Richmond, General Surgery; Dr. Carl A. Hedblom, Chicago, Chest Surgery; Dr. Wm. O'Neal Sherman, Pittsburgh, Industrial Surgery; Dr. Paul Titus, Pittsburg, Obstetrics and Gynecology; Dr. Edw. H. Richardson, Baltimore, Gynecology; Dr. Herman L. Kretschmer, Chicago, Urology; Dr. Dudley A. Smith, San Francisco, Proctology; Dr. Merrill C. Sosman, Boston, Radiology; Dr. John A. Kolmer, Philadelphia, Clinical Pathology.

In addition to being heard in general assemblies each morning, the distinguished guests will hold clinics in the afternoons at six allied hospitals, and in addition will appear in evening programs as follows:

General public meeting, Monday evening, March 29th: Dr. T. R. Brown, Dr. Frank H. Lahey, Dr. Karl A. Menninger; Dr. E. H. Cary, President-elect of the American Medical Association.

Symposium on Tuesday evening, March 29th, "Diseases of the Biliary Tract," Dr. Thomas McCrae, Dr. J. S. Horsley, Sr., and Dr. M. C. Sosman.

On Thursday evening, March 31st, there will be two symposia: One on "Arthritis," featuring Dr. John A. Kolmer; one on "Conservation of Maternal Health," featuring Dr. Edw. H. Richardson.

The Baker Hotel will remain as Conference headquarters, for registration, technical and scientific exhibits, general assemblies, and part of the post-graduate hours and round-table luncheons, the others being held across the street at the Adolphus Hotel.

By a new arrangement, on the afternoons that medical subjects are being presented downtown in post-graduate lectures, surgical topics will be discussed in hospital clinics, and vice-versa. Another innovation is that every post-graduate lecturer will have abstracts or outlines of his talk, to distribute to his auditors.

The round-table luncheons have always been

one of the most popular features of the conference. This year luncheons will be held on each of the first five days, in six groups: Medicine, Surgery, Pediatrics, Eye-Ear-Nose-Throat, Urology, Orthopedics.

Emphasis, as always, will be placed on worthwhile "work," but on Wednesday evening, March 30th, "play" will be in order, at a brilliant Clinic and Alumni dinner, with elaborate entertainment.

A nice variety of motion pictures, with sound, will be shown on the opening day. The technical exhibits will be more instructive, and the scientific exhibits will be much more extensive than formerly. A golf tournament comes on Friday afternoon.

Another interesting innovation for 1932, will be medical ward rounds and surgical operative clinics at local hospitals Friday afternoon and Saturday morning, by Dallas members of the Clinical Society. Luncheon will be served Saturday at the hospital.

For this year special reduced railroad rates have been granted from practically three-fourths of the total area of the United States. The rate will be one and one-half fares for the round-trip, on the most convenient plan possible—the identification certificate plan. By this arrangement, upon presentation of a "pink slip" furnished by the Secretary of the Clinical Society, a registrant can purchase his round-trip ticket right at home, with a return limit of thirty days. Doctors coming from outside the South and West, may buy tickets at reduced rates from the first main point they reach within the territory. Within Texas and Louisiana, prevailing rates of one and one-third fares for the round-trip, are available at any time.

About March 1st a copy of the final program will be mailed to approximately 9,000 doctors in Louisiana, Arkansas, Oklahoma, Texas, New Mexico, Arizona, and Southern Colorado. A copy will also be gladly sent to anyone else requesting it.

Dallas has ample hotel facilities, but reservations are pouring in rapidly for the Baker and Adolphus. Hotel reservations, advance registration, certificates for reduced railroad rates, and requests for programs should be handled through the secretary of the Dallas Southern Clinical Society, Dr. Milford O. Rouse, 1424 Medical Arts, Dallas.

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#### PREVENTION OF SPINAL CORD DEGENERATION IN PERNICIOUS ANEMIA

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A survey of the clinical course of eight patients with pernicious anemia and spinal cord degeneration observed by Paul Starr, Chicago (Journal A. M. A., April 11, 1931), indicates that they may be divided sharply into a group of four that have grown steadily worse. The period of observation in five of these cases is more than three years; the others have been followed from one and a half to two and a half years. It would seem that the patients who received sufficient specific antianemic substance to keep the red blood cell count above 5 million per cubic millimeter did not have progressive degeneration of the central nervous system in contrast to those who were allowed to remain even slightly anemic, in whom progressive degeneration did occur.



### SQUAMOUS CELL CARCINOMA OF THE ORBIT: PROBABLE METAMORPHOSIS OF AN ADAMANTINOMA

According to George Francis Suker, Chicago (Journal A. M. A., Nov. 7, 1931), the adamantinoma as such is not a very rare tumor. It occurs most frequently in the upper jaw or antrum. It is either a solid or a cystic growth. Many times it has a structure resembling a gland—then designated adenoma adamantinum or epithelioma adamantinum. It develops from the parodontal epithelial remains of the enamel organ which springs from the adamantoblast. Any tumor arising from this blast is called an adamantoblastoma. Adamantinomas frequently develop from old roots or snags and are relatively benign, unless they undergo metamorphologic changes. Their structure is a fibrillary spindle cell network with many proliferations from these cells. Often the cellular structure is not unlike a carcinoma or even a gland. A close inspection of these epithelial cells shows a close relationship to the early embryonic enamel cell, in its very incipient stages of development. The outer cells are highly cylindric, the next layers are polygonal flat epithelial cells. Eventually these polygonal cells may undergo cystic degeneration and by confluence form larger cysts. These cysts are then usually surrounded only by the cylindric cells. In such instances the picture closely resembles glandular structure. The author reports a case of the solid form, which is the more unusual type. It is not so improbable that there have been similar or like cases, but they may have been mistaken for other types of tumor because they had osteoid changes or degeneration; or, as they often resemble adenomas, they may have been taken for cylindromas arising from the orbital lacrimal gland, or for fibrosarcomas, with bony changes, or even for epulis. At all events, there is some justification in assuming that this case is the first of its kind reported.

### PITUITARY THERAPY OF ALOPECIA: PRELIMINARY REPORT

Five years ago, while Bengt Norman Bengtson, Maywood, Ill. (Journal A. M. A., Nov. 7, 1931), was resident at the Research and Educational Hospital of the University of Illinois, a woman with Frohlich's syndrome was treated with various pituitary preparations. During the treatment, she developed a luxuriant hair growth, in addition to regaining her normal sexual desires, reestablishing her menstrual cycle, and losing weight. The growth of hair was particularly remarkable in that the patient and her immediate female relatives (mother and two sisters) all had, since early youth, a scanty atrophic type of hair, prone to dryness and easy end-splitting. Inferring a relationship of the pituitary therapy to this patient's hair growth and its change in texture, the author began to study the effects of certain pituitary preparations in cases of alopecia. He reports on sixteen patients, in all of whom the results were so striking that a preliminary report seemed desirable to render this treatment available for investigation by others, in spite of the relatively small number of cases. It seems that coincidence could be ruled out by the uniform success in these sixteen patients, most of whom tried (one over a period of twenty-three years) various kinds of other treatments. The patients were taken in order of admittance and

treated without preference or selection. The results secured might be anticipated on theoretical consideration. An endocrine motor mechanism for the growth of hair must a priori be postulated, and, in view of the intimate association of the sex glands to the development of hair and of the pituitary to the sex glands, this mechanism might reasonably be looked for among these glands. On the basis of his observations the author concludes that a definite therapeutic relationship seems established between certain alopecias and the pituitary gland preparations used. The anterior lobe was in most of the cases, the sole influence in producing the growths of hair obtained. The hypodermic use of pituitary gland secured more satisfactory and more rapid hair growth than oral administration, which on the whole is disappointing. The combination of hypodermic injections in large doses (2 cc.) and oral administration was found to give the most rapid response.

### MAGNITUDE OF REGURGITATION WITH AORTIC LEAKS OF DIFFERENT SIZES

Carl J. Wiggers, Cleveland (Journal A. M. A., Nov. 7, 1931), has long maintained that crucial evidence of a considerable regurgitation in aortic insufficiency has not been adduced and further that all the typical signs can be logically explained on the assumption that only a reasonably small regurgitation takes place. By this he means a regurgitation volume equivalent to about 5 or 10 per cent of the systolic ejection, in contrast to the 50 or 60 per cent generally assumed by those who speak of a large, a considerable, a substantial or a significant regurgitation. He restates briefly the defects in the experimental evidence which led to his contention and then presents briefly recent experiments from his laboratory which make it necessary to abandon the view in the case of large leaks. Summarizing his present views, he states that both the magnitude of the regurgitation and its distribution during successive phases of diastole are determined by the size of the leak. Undoubtedly there are many incipient cases of aortic insufficiency clinically in which the magnitude of the regurgitation is not great, but it is probable that in advanced stages of the disease a large reflux obtains. In the former, regurgitation predominates during the latter phases of diastole; in the latter, it happens chiefly during the initial period of relaxation. Between these extremes, all gradations occur. The author's recent studies give promise of supplying a method by which the size of the leak can be estimated in patients. The chief criterion is the steepness and depth of the incisural drop evidenced in optical records taken from the subclavian artery of man.

### RECENT ADVANCES IN INTERPRETATION OF ELECTROCARDIOGRAM

In answer to the question of what is the place of the electrocardiograph in clinical medicine, Louis N. Katz, Chicago (Journal A. M. A., Nov. 7, 1931), states that it is not, as some believe, the final authority on all ailments of the heart, nor is it, as others hold, an impractical toy for the curious, an impressive hoodwink for the unscrupulous, or a good investment for the mercenary. The value of the electrocardiogram in elucidating the applied physiology of the heart in the last thirty years has been extraordinary. It is still useful in many

ways in clinical medicine; viz., (1) in determining the nature of cardiac irregularities, (2) in estimating myocardial involvement, (3) in locating valvular or congenital lesions, and (4) in aiding the management of cardiac cases. Too much must not be expected from the electrocardiograph. While the electrocardiograph has a definite place in clinical practice, it cannot replace the customary methods of making a diagnosis, as some physicians have imagined. The author discusses in detail the value of the electrocardiogram in disturbances in cardiac mechanism, in myocardial involvement, in ventricular preponderance and in the management of cases of arrhythmia.

THIRTEEN S.M.A. PRODUCTS APPROVED

Word has just been received that the Committee on Foods of the American Medical Association has approved SMACO (400) Maltose and Dextins.

This makes twelve products of the S.M.A. Corporation that have successfully met the requirements and have been approved by this committee,

which is well known to have very high standards. It speaks well for the skill and high standards of this company that so many products have thus far been approved.

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The Council on Pharmacy of the American Medical Association has also re-accepted Protein S.M.A. (Acidulated) following the annual re-examination of products they accept.



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## PNEUMOCOCCIC MENINGITIS CASE REPORTS—WITH ONE RECOVERY

ELBERT H. SHULLER, M.D.  
MCALESTER

A variety of diseases are caused by the pneumococcus. It is an organism which is found in the mouths of from 80 to 90 per cent of our people and the group of diseases caused by it is one of the greatest menaces to our race. Osler says in the words of John Byron, "One of the most widespread and fatal of all acute diseases, pneumonia, has become the 'captain of the men of death.'"

Pneumococcic meningitis is a disease caused by this organism and which may be primary in the meninges or may be secondary to a pneumococcic infection in some distant organ and which, though comparatively rare, wields even a more deadly sword than does pneumonia. Until recent years it was considered to be a disease which was 100% fatal, but more recent observation has shown that there are occasional cases which are definitely proven to be pneumococcic meningitis that recover. In a series of twenty-nine cases reviewed by the author there were reports of five recoveries.

Of this group of cases there were eight cases reported as primary and twenty-one as secondary to some other focus. Of the twenty-one which were secondary, ten were secondary to otitis media and mastoiditis, three were accompanied by pneumonia, three associated with meningococcic meningitis and the primary focus of the pneumococcus not determined, two secondary to acute laryngitis and bronchitis, and one secondary to an abscess of the scalp from which the pneumococcus was isolated. The source of the other two was not given.

There has been considerable discussion as to how the infection reaches the meninges. It has been demonstrated that there are minute lymph channels extending from the mucous membrane of the nasal passages to the meninges and it is concluded that the infection may pass to the brain by this route. It may also be concluded that the infection may reach the meninges from the peri-nasal sinuses and the mastoid cells and middle ear in the same way.

In the review of the cases just made there are several cases which cannot be traced to a definite focus and with no manifestation of involvement in the media by which it reached the brain. This can be explained by the assumption that the infection is transmitted through the blood stream. Chaliar and Puig<sup>1</sup> reported two cases in the J. de Med. de Lyon in which no primary focus could be demonstrated, but a pneumococcemia was demonstrated by culture. He also refers to experiments by Voisin in which the pneumococcus was injected into the blood, the ear and the nose of dogs. He found that in all cases of meningitis that occurred in the cases where the pneumococcus was injected into the nose, a pneumococcemia was demonstrated by culture. In this paper two cases will be presented in which there was evidence of a pathological process in the blood stream as manifested by an extensive subcutaneous purpura. Unfortunately, no blood cultures were taken.

It is not an uncommon thing to observe symptoms in cases of pneumonia which suggest that there is some cerebral irritation. This may not be histologic or organic, but rather due to the profound

toxemia, and be passed off as meningismus. This is not always true, however. In a series of fifty-five cases of pneumonia which were autopsied in the clinic of Palermo<sup>2</sup> between 1880 and 1896, there were five cases of meningitis not diagnosed ante-mortem, and in the series reviewed several were diagnosed though not confirmed till autopsy. Meningitis developing secondary to pneumonia or other pneumococcic foci, may present the typical symptoms of any meningitis, or it may be practically devoid of nervous symptoms. Corcan,<sup>3</sup> in an article in the *Rev. Frac. de Pediat.*, Paris, in 1928, reported four cases and referred to others in which the chief symptoms were prostration, restlessness, generalized muscular hypertonia, and stiffness of the neck. Autopsies on all of these cases showed a very definite meningitis. The symptoms of the meningitis may be general or localized or even absent entirely. The severity of the symptoms, according to Pollaci,<sup>4</sup> depend on the variation of increase of the intracranial pressure. If the infection is general and the intracranial pressure is generally increased, then the symptoms will be general. If the infection is localized and the pressure is local, then the symptoms will be local. If the process is local and located in a silent area the symptoms may be entirely absent. In any case of acute infection of the respiratory tract where nervous symptoms occur they should not be treated lightly.

The diagnosis of this type of meningitis, whether primary or secondary, the same as any other type, is made from symptomatology and from spinal puncture. In most of the cases reviewed by the author the diagnosis was confirmed by the analysis of the spinal fluid. In several cases the gram positive organism was found in the fluid of the initial puncture. This was not constant, however. In several cases the punctures were repeated several times before the invading organisms were found. In some cases, usually with pronounced symptoms, the fluid was under marked increase of pressure and with marked increase of white cells and albumen. In others there was very little increase of pressure and practically no change in cytology, yet at autopsy very definite pathology was demonstrated. Corcan,<sup>5</sup> reports two cases in which repeated spinal punctures were negative, yet at autopsy a definite meningitis was found extending over the entire cortex from which a pure culture of pneumococci was

isolated. In these cases there was no evidence of involvement in the cord, the bulb or the ventricles, and no adhesions around the foramina. He also refers to cases reported by Holt, Brady and Weill, Bertoye and Bujudoux, in which the same findings were present. None of the purulent foci seemed to communicate with the spinal canal or with the peri-encephalitic spaces. The exudate seemed to be extremely dense and fibrinous and thus the focus remained encysted.

Corcan also reports two cases in which the early symptoms were practically the same as those mentioned above in which repeated punctures were done and the first reports of the analysis were negative while the latter ones were positive. Autopsy on these patients showed conclusively that there had been a localized focus of meningitis which later became general. He concludes that the change of intracranial pressure which followed the punctures allowed a filtration of the pus through the fibrino-plastic barrier thus producing a purulent transformation of the cerebrospinal fluid.

Treatment of this condition has not been gratifying. There seems to be no treatment which has been universally satisfactory. Of the five recoveries referred to above, one was treated by spinal drainage and the injection of Felton's serum intraspinally and intravenously. A second was given potassium permanganate per rectum by the Nott technique. A third was treated by drainage and the use of polyvalent anti-pneumococcic serum. The fourth was treated by intra carotid injections of Pregal's solution of iodine and neutral acriflavine. The fifth was treated by subdural drainage alone. Uhr,<sup>6</sup> in an article published in the *Archives of Pediatrics*, in 1929, refers to reports of recoveries of isolated cases by Halle, Parkinson, Culper, Brown, Ervin, Rosenow, Glovus, Harkey and others. The methods of treatment in these cases not mentioned above are, drainage and injection of pneumococcic vaccine, Hamton's antibody solution, intramuscularly and intradermally, and ethylhydrocupreine hydrochloride.

Since there seems to be no specific treatment and since a large percent of the cases are secondary to infections in the sinuses and mastoid cells, it seems that the best method is prophylaxis. A careful investigation and adequate surgical drainage of all accessible foci will do much to lower the frequency of the disease and thus low-



er the mortality. If the disease has developed, then it must be treated with the best means that we have at hand.

At this time I wish to present two cases which came under my observation, one of which was treated with recovery.

Case No. 1. G. R. M. Entered University Hospital, October 30, 1930, at 4 o'clock, P. M. History was not obtained because of irrational state of the patient. It was learned, however, that he had taken suddenly ill two days before admission.

Examination revealed an acetone breath. Eyes did not react. There was no strabismus or nystagmus. Heart apparently normal except for tachycardia. Auscultation of lungs revealed coarse rales in both bases but there was no evidence of massive consolidation. Rigidity of the back and neck was slight. There was very little response to Brundinsky and Kernig's tests. There were very numerous small petechial hemorrhages over the entire skin surface.

Urine analysis showed sp. gr. 1019, some acetone and many hyaline casts. Blood count showed 48 leukocytes, 46 neutrophils, 8 transitionals and 46 S. L. Platelets were entirely absent. On a basis of the urinary findings, a blood protein was made and reported as follows: N. P. N. 120, urea 67.5, uric acid 8, creatinin 8. He expired five hours after admission. A spinal puncture was done immediately post mortem and a cloudy fluid was obtained. Analysis showed a cell count of 420, practically all polys and many gram positive diplococci. Whether the nitrogenous retention was a coincidence or a sequence of the meningitis is not known. An autopsy was not permitted.

Case No. 2. S. A. World war veteran, age 36. Entered University Hospital, April 11, 1931, with history of onset three days prior to admission with chill, high fever, sore throat, severe occipital headache, and pain in the back. There was marked rigidity of the back and neck and also a very extensive purpura for two days before admission. Examination revealed the patient to be in a stupor. The eyes reacted normally to light and accommodation. There was no nystagmus or strabismus. No marked inflammation of the throat. Auscultation, percussion, and X-ray of the chest was negative. Heart was apparently normal. There was an extensive purpura over the entire body surface together with a hypersensitiveness of the skin surface. Brundinsky and Kernig's signs were positive and all deep reflexes were exaggerated. The urine was normal. Blood count showed the red cells to be normal with a leukocytosis of 20,100 with 87% polymorphs, and 13 small lymphocytes. Analysis of the spinal fluid done on admission revealed heavy globulin and a cell count of 24,000 leukocytes with 71% polymorphs. Also many gram positive diplococci were found by direct smear. Culture of the fluid revealed the same organism. The puncture was repeated the following morning and the analysis was practically a repetition of that of the evening before. About 20 cc. of spinal fluid was withdrawn and 15 cc. of Mulford's pneumococcal antibody solution was given intraspinally and 35 cc. intravenously. Spinal and cisternal punctures were repeated on the first, second, third, fourth, fifth, seventh, tenth and fourteenth days following admission, and as much fluid

as would drain freely was removed. This was usually from 20 to 30 cc. Fifty cc. of the antibody solution was given on the first, third and fifth days, a portion being given intraspinally, usually being 5 to 10 cc. less than the amount of fluid removed and the remaining portion being given intravenously. No organisms were found either by smear or culture after the first injection of the antibody solution. The cell count of the fluid rapidly dropped until the time of the last puncture which was done on the 14th day following admission when only 26 cells were found. There was never any marked increase of pressure and after the fourth day the fluid was practically clear. The temperature varied between 100 and 103 the first nine days then gradually subsided. The pulse followed a line proportional to the temperature. After the first week the rigidity of the neck and back began to subside and the purpura disappeared. Convalescence was progressive, but on the twenty-first day, he developed what appeared to be a phlebitis in the right calf, which subsided after a few days. The patient had considerable difficulty in regaining the motor function of his limbs, but on May 19, 1931, thirty-five days after admission, he was discharged from the hospital apparently entirely recovered.

Unfortunately, a blood culture and a blood chemistry was not done on the latter case. Whether the purpura was caused by a severe uremia such as was present in the first case, or whether it was caused by bacteremia is not known, but with apparent adequate urinary function, the absence of positive urinary findings, and the absence of the characteristic odor of uremia, it was concluded that it was probably due to a bacteremia associated with the meningitis. It is impossible to say what was the main factor in the recovery of this case. Some of the observers feel that the recovery was due largely to the repeated drainage. Others contend that since there were never any organisms found after the first injection intraspinally, the antibody solution probably played some role in the recovery.

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## SOCIAL INSURANCE—MOST GOVERNMENTS ARE INEFFICIENT OR CORRUPT—SOME ARE BOTH.

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One of the very first questions that naturally arises is: Have any of our government agencies so conducted themselves in the past as to make it reasonably safe for us to entrust so stupendous a function as universal social insurance to any branch or department? I maintain that most of our local as well as state governments are inefficient or corrupt, and some are both.

Let any one who doubts the correctness of this statement spend a little time to look around with a critical eye and observe how most local governments, the various departments of the state in which he lives, and the departments of the federal government are conducted, and I am convinced that he will find more inefficiency than he has ever dreamed could exist. If he does not personally know of corruption and inefficiency in government, let him but scan one single daily newspaper regularly for a month in order to be convinced. And what else can one expect who is at all familiar with politics as it has been played and managed in these United States in the year 1931—the manner in which most men secure their nominations and later their elections, and to whom they are beholden when they take office?

We have all seen the statement repeatedly in the public press, but have never seen it successfully refuted, that in many of the political subdivisions of our country only sixty percent of the taxes collected are effectively spent, the remainder being fritted away, wasted or stolen. This inefficiency and corruption is due to many causes of which some of the more important are:

The fact that so far no formula has been discovered according to which the most efficient, honest, industrious and worthy members of the community can be secured for public office. Nor has there been any method devised whereby spoils politics, favoritism, pull, nepotism, waste and graft can be eliminated with even a reasonable degree of certainty. The individual who could solve these two problems would not only be the greatest benefactor of the human race but the wisest man the world has so far produced. Plato tried to solve this problem twenty-three centuries ago when he wrote his Republic. For a time he actually thought he had found a solution. He prevailed upon the King of Syracuse to adopt his plan and put it into operation. The King tried it for a while, tired of it and sold Plato into slavery. Some good friends ransomed him. After that he was not so sure that his scheme would work in practice. Things are not much different today than they were in the time of Plato. Only worse.

Worse because of the increase in population resulting in larger governmental units, the enormous increase in the number of those exercising the franchise, the increase in the percentage number of ignorant voters and the ever increasing astuteness and finesse of our practical politicians.

Inefficiency and corruption is so common that we have become callous to it. We are annoyed by it, we grumble and complain mildly about it, we pay our ever mounting taxes if we have anything with which to pay and "let it go at that." It almost seems as though we humans had adopted David Harum's dog philosophy and were applying it to ourselves. He said:

"A certain amount of fleas is good for a dog, it keeps him from brooding on being a dog."

The best illustration of governmental muddling in general is to be found in the mess most governments of the world have made of themselves during the past twenty years. As examples, we need but call attention to the virtual bankruptcy of Germany and of Austria, the maladministration in Russia, the revolutions in Spain, China, Central and South America, the dictatorships in Poland and Italy and when we come nearer home, the general lawlessness in the United States with its murders and kidnaping for ransom; conditions in the city of New York as disclosed by the Seabury Investigation; the virtual bankruptcy of Chicago and Philadelphia, and the near bankruptcy of many other governmental units.

Let us study conditions in our own country a little more in detail in order to determine whether it would be wise or even safe to entrust the federal, state and local government or any one of them, with supervision over the private lives of its citizens. (This phase of the problem will be taken up more in detail in the future installments).

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## PARENTERAL USE OF LIVER EXTRACT IN TREATMENT OF PERNICIOUS ANEMIA

A series of fourteen cases of pernicious anemia in relapse were treated by Joseph E. Connery and Leonard J. Goldwater, New York (*Journal A.M.A.*, March 26, 1932), with varying amounts of a parenteral liver extract. In all cases there occurred prompt hematologic and clinical improvement. In general those factors which influence the clinical and hematologic course in patients treated with whole liver or with liver extract by mouth operated in the cases treated parenterally. A plan of treatment is suggested. There is some evidence that smaller dosage may be adequate. Nothing in any way suggestive of an allergic reaction of any type was noted in more than 500 intramuscular injections. A group of cases previously treated with other forms of liver therapy were changed to treatment with weekly intramuscular injections of the material derived from 100 Gm. of liver. Two of these cases showed red cell counts below 4 million when the treatment was changed. All the cases showed clinical and hematologic improvement, and remained in a state of satisfactory remission during the period of observation. Special indications for the use of parenteral liver extract are enumerated. A miscellaneous group of patients suffering with various forms of secondary anemia were treated with any hematologic or clinical improvement noted.



# THE DIAGNOSIS AND MEDICAL TREATMENT OF PEPTIC ULCER\*

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MADILL

The medical treatment of peptic ulcer is very important, because it is estimated that 90% of the peptic ulcer cases respond to a strict medical regime. The word peptic ulcer is used to include both gastric and duodenal ulcer, since their treatment is essentially the same.

The first important step in the treatment of a peptic ulcer is an accurate diagnosis. The symptoms of a peptic ulcer are usually clear cut. Pain is the most characteristic symptom. Its interval following the ingestion of food is important. In gastric ulcer, the pain follows after an interval, the taking of food which gradually disappears before the next meal. In duodenal ulcer, the pain continues until the next meal. The rhythm of gastric ulcer, "food, comfort, pain and comfort"; of duodenal ulcer, "food, comfort and pain." Also, relief by alkalization and finger point localization of pain may be helpful. The history of indigestion or dyspepsia with gnawing hunger sensations, belching, acid eructations, sour stomach, etc., are always noted.

The next important step is a complete physical and laboratory examination. Carefully check for any foci of infection as teeth, tonsils, appendix, etc. X-ray is valuable, and will give lots of data. Blood, urine, blood pressure and Wassermann are helpful. Test meal to determine your free acidity and occult blood should be done. The string test will give knowledge of the location of the ulcer.

At the University of Chicago, a recent method of diagnosis is to give stated amounts of 0.5% hydrochloric acid until typical ulcer symptoms appear. 200 cc. of 0.5% hydrochloric acid may be given. Any amount under this may produce the typical ulcer symptoms. In thirty minutes, if necessary, 200 cc. of 0.5% hydrochloric acid may be given and in a majority of cases definite pain of a peptic ulcer will

be present. In a few cases another 200 cc. of 0.5% may be given to get the typical symptoms.

The next important step is thorough alkalization of the free gastric acidity. How is this done? The Sippy plan of treatment of alkalies with milk and cream alternating every hour is the best plan we have. The contents of the stomach removed then through the duodenal tube would show whether or not there is control over the free acid. The Sippy outline will not be gone into by this paper.

The results from the Sippy plan of treatment are excellent. However, what must be done for the patient who has neither time nor money to take the three weeks rest in bed? The general practitioner does not have the time to lavage the stomach to see if the free acid has been properly neutralized even if the patient has the time and money. These are the cases that we must deal with in general practice.

The simple ambulant treatment of giving a bland carbohydrate diet plus your alkalies with frequent feedings gives excellent results. The simple plan is to give a carbohydrate diet at meal time with meat, etc., with milk feedings in between meal times, *viz.*, 9:30 A. M., 3:30 P. M., and at bed time. Alkalies are given at meal times and at milk feedings. The alkalies can be left off at milk feedings in a majority of cases. The usual suggestion is that these patients can get their milk drink at the soda fountain, if they like, in between meals. In the past few cases of definite peptic ulcer this regime has worked well. How long should the patient stay on this treatment? All authorities agree for three months and maybe a year.

What is the ideal antiacid? Calcium carbonate first because (1) high neutralizing power, (2) can be given ad libitum, (3) if taken in excess is passed out in the feces. Next is magnesium oxide, has four times the neutralizing power of sodium bi-

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carbonate but is a laxative which condition must be watched. Next is sodium bicarbonate but has some disadvantages: (1) produces an alkalosis when taken in excess, (2) alkalizes the urine and predisposes to precipitation of alkalies in the pelvis of kidney, ureter, and bladder. Bismuth subgallate, and bismuth subnitrate are used because of the soothing effect of bismuth to the ulcer.

In cases of pyloric obstruction due to pyloric spasm, after thorough alkalization, tincture of belladonna in 5-10 minum, doses three times daily will most likely give you relaxation of the spasm. Also emptying the stomach at bedtime by the duodenal tube is an advantage.

Foci of infection should be eradicated, as bad teeth, tonsils, etc. Tobacco should be refrained from because tobacco has a tendency to increase gastric acidity and secretion.

To recapitulate: first make an accurate diagnosis; second, thorough neutralization of gastric acidity and alkalies; third, proper diet; fourth, eradicate the foci of infection; fifth, rest.

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#### INDISPENSABLE USES OF NARCOTICS

Geza de Takats, Chicago (Journal A. M. A., Apr 11, 1931), discusses the use of narcotics in local anesthesia with the least possible danger to the patient. Premedication to local anesthesia aims to diminish psychic reactions and painful sensations. In minor, ambulatory procedures it is not necessary. Before major surgical operations, the restless night, the fear and anxiety not only exhaust the patient but will cause definite bodily changes. As the patient is usually not in actual pain, sedatives of the barbituric acid series are sufficient. Phenobarbital, 0.5 Gm. (7½ grains), n-butylethylbarbituric acid (N. N. R.), 0.2 Gm. (3 grains) and isoamylethylbarbituric acid (N. N. R.), 0.2 Gm. (3 grains), are helpful in producing a light, restful sleep the night before the operation. In the over anxious, hyperthyroid or mentally deranged patient the best drug is his ignorance of the time of operation. Two hours before the operation the dose given the night before is repeated. The routine use of morphine, from 0.01 to 0.02 Gm. (1-6 to 1-3 grain) is not logical. One is frequently impressed by the salivating, nauseated, highly uncomfortable patient arriving at the operating room, worse off for the morphine. Cocaine was the first real local anesthetic. In spite of continuous attempts, it has not been possible to supplant it entirely with less toxic drugs. Its use should be

limited entirely to a surface anesthesia of the eye, nose and larynx. The same amount of drug in higher concentration is absorbed more rapidly. Every effort should be made to use the minimal effective concentration. This is 2 per cent cocaine hydrochloride for the eye, 5 per cent cocaine hydrochloride for the nose, 0.5 per cent procaine hydrochloride for infiltration anesthesia, and 1 per cent procaine hydrochloride for nerve block. The most frequent causes of toxic symptoms are too heavy premedication, error in the concentration of the solution used, inadvertent intravenous or intraspinal injection, and an individual hypersensitivity to cocain and its derivatives. Death is due to a paralysis of the respiratory center and circulatory depression. One can protect the central nervous system with an intravenous injection of sodium isoamylethylbarbituric acid, 0.5 Gm. (7½ grains), at the beginning of the convulsions. Artificial respiration must always be tried. A peculiar somnolence is sometimes noted during sacral and paravertebral block. Under certain conditions a sedative instead of an excitatory effect takes place. The patients are pale, the blood pressure falls. Ephedrine hydrochloride or sulphate 0.1 Gm. (1½ grains), injected under the skin combats the fall in blood pressure. This drug is also useful to prevent a fall in blood pressure during spinal anesthesia. The foregoing considerations attempt to emphasize the dangers of using drugs in unnecessarily large doses or heavy concentrations. The fact that ten or even a hundred patients had tolerated an excessive dose only shows the great variation in tolerance to drugs. The hundred and first may be the victim of unjustifiable carelessness or of too much optimism.

#### HUMAN SIDE OF THE HOSPITAL

Joseph Brennemann, Chicago (Journal A. M. A., Nov. 14, 1931), states that after an extended experience with a dozen widely differing hospitals, as intern, attending physician, visitor and patient, his attitude toward a given hospital centers in the emotions, in the heart, rather than in the mind, and he believes that reaction is freely shared by others. It is not the idealness of equipment and of organization but the subtler spirit of enthusiastic and self-effacing cooperation, of steadfast, sympathetic loyalty and devotion to a common cause that is bigger than any individual, that makes hospitals. It is the atmosphere, the morale of a hospital, that makes or wrecks its reputation and its usefulness. The children may be well cared for; the medical staff may be made up of able clinicians and investigators; the superintendent may be as wise as Solomon and as "just" as Aristides, and may see that the whole machinery of administration is well oiled and the physical equipment faultless; the board of trustees and the women's board may be actively interested and may do all that could be desired in other ways; the nurses may be intelligent, faithful and well trained; the interns and residents may be well schooled and prepared for their duties, may, indeed, get up at seven and be at breakfast on time; and yet the vital spark will be lacking if there is not back of it all an all-prevailing spirit of cooperation and of kindness or, as Emerson has so beautifully expressed it, "an element of love that permeates it like a fine ether."



# CONIZATION OF CERVIX WITH THE ELECTRIC SCALPEL

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TULSA

I wish to state that the electric scalpel (or electric knife), is not a knife nor a cautery, but just an electric applicator.

The day was when a physician who used electricity was considered a faker, but today if he does not use it he is considered a fogie.

Diathermy like every other innovation, has passed through a period during which its over-enthusiastic, but often misinformed advocates, caused many practitioners to doubt its efficacy. With more careful observation and earnest and persistent investigation, the possibilities are becoming more appreciated, while the indications and contraindications for its use are better understood. Particularly is this true in its surgical application to gynecological disorders, the subject of this presentation.

Dr. Howard Kelly says that electro-surgery is par excellence, a knife and fork procedure. To those who have learned its technique and its possibilities, in its proper special fields, it is as far superior to our most ancient and honorable scalpel surgery, as is the electric tramway ahead of the lumbering horse cars of our youthful days.

It is indeed a curious reflection that after milleniums of scalpel surgery, with its attendant ligating, needling, and suturing, in this age, so ancient a craft as ours should be called upon, like Benjamin Franklin, to snatch the power from the lightning which flashes in the heavens and from the electric spark of the rubbed amber with which to attack our worst enemy, cancer.

In presenting this paper, I do not intend to review the voluminous literature, past or present, or discuss the relative merits of the numerous methods of treatment advocated and practiced for the relief of endocervicitis, conceded to be the most prevalent of all gynecological disorders. It occurs in 85 per cent of women, is insidious in onset and course, is highly resistant to the ordinary therapeutic methods, and shows little or no tendency to spontaneous cure. Dr. Charles Mayo says

that when you get a history of a woman treating with an eye man, to look at the cervix, for most invariably they will have an infected cervix, especially if the eyes are red, and having glasses changed often.

It is my purpose to outline conization of the cervix with the electric scalpel, devised by Prof. M. N. Hyams of the New York Post Graduate Medical School, and the results obtained from 350 cases so treated.

Since all present are not gynecologists, a brief resume of the anatomy, histology, and pathology of the cervix necessarily precedes the presentation of the subject matter proper, in order that the rational of the treatment may be better understood. Only by a thorough study of the normal cervix and structural changes in the diseased endocervix can the efficiency of any method of treatment be judged.

The lower part of the uterus or cervix is about one inch long and arbitrarily divided into three subdivisions: the supravaginal, intermediate, and vaginal; limited distally by the external os, and proximally by the internal os. The anterior fornix is shallow, the posterior deep. The muscular layer contains a large amount of connective tissue and hence is firmer than the body of the uterus. At the isthmus the circular artery furnishes the blood supply. There are no sinuses in the cervix similar to those found in the uterus.

The distal portion of the cervix or external os is approximately five millimeters in its transverse diameter; sometimes circular, often oval, and covered by stratified squamous epithelium. Following pregnancy, instrumentation, infection, trauma, or disease, the os may be distorted or enlarged. The size can vary from a minimum, slightly larger than normal, to a maximum, when the circumference of the os coincides with the diameter of the cervix at its lower end. The internal os is circular, about one millimeter in diameter and rarely changes its definite shape.

The cervical canal, about one inch in length, lies between the internal and external os. It is fusiform or spindle shaped, its widest diameter nearly on a level with the posterior fornix and the narrowest portion at the internal os. So far as we know, it acts only as a passage way between the uterus and the vagina. The canal is lined by mucous membrane which is almost one millimeter in thickness and presents a longitudinal ridge of its anterior and posterior surfaces from which a large number of folds or rugae branch off obliquely and laterally, connecting these two ridges. Due to the numerous folds and plications this relatively small surface is increased in actual area, presenting an extensive surface to infection.

The epithelium at the isthmus is of the low columnar or cuboidal variety, some nuclei, being near the upper portion of the cell, others either at the center or the base. Advancing toward the external os, this epithelium becomes of the high columnar, ciliated variety, about forty by four microns in size, with a constant basement nucleus. At or about the junction of the middle and lower third of the cervical canal, a change takes place in the epithelium, the simple columnar gradually undergoing transition to the stratified variety. There is a definite basement membrane below the entire epithelium.

Scattered throughout the mucous membrane are many simple tubular glands about one to two millimeters long, similar to those found in the uterus, but the racemose variety predominates. The ducts open into the cervical canal. The glands usually stop at the basement membrane though some extend beyond this structure, the depth from the surface being about three millimeters or one-eighth inch. Approaching the internal os the glands become fewer and more shallow, and it is conceded that infection rarely, if ever, originates at this particular location.

There is a difference of opinion as to whether bacterial infection spreads by continuity or by the lymphatics. Regardless of the manner in which this takes place, it is a fact that primary infection of the cervix ascends into the uterus, fallopian tubes, ovaries, and parametrial tissues.

The extent and rugosity of the cervical mucosa affords innumerable recesses for pathogenic organisms, while the traumatized and lacerated cervix is an open door to infection. The mucosa of the cer-

vix becomes swollen, oedematous, and often everted with a loss of its cilia, while the mucosa of the portio about the external os presents a circumscribed area of glandular proliferation. The earliest stage of cervical infection represented by an infiltrated area denuded of squamous epithelium, the result of necrosis and maceration of the surface layer, a true erosion but rarely seen at this stage.

The columnar epithelium under constant irritation of infection pushes itself out on to the vaginal aspect of the cervical rim, replacing the stratified epithelium, producing the so-called, "erosion," classified as simple, if the surface is smooth and the glands few in number with no dilatation; follicular, if the glands are numerous and dilated; and papillary, if the glands are numerous, running downward, parallel to one another, producing a papillary appearance, due to the numerous stroma papillae which project upward between the glands. The continued congestion produces a hypersecretion of mucous from the infected glands and ultimately a hypertrophy and hyperplasia of the cervical connective tissue. Sooner or later the crypts or the ducts of these glands become occluded, resulting in subsequent cyst formation commonly known as Nabothian cysts. This cystic condition increases the bulk of the already hypertrophied cervix, interfering with normal circulation and muscle contractility.

The symptoms are so well known that they are regarded as classic, which are; discharge, backache, pain in lower abdomen, dysuria, metrorrhagia, dysmenorrhea, pruritus, headache, sterility, menorrhagia, and dyspareunia, as can be expected from the pathological changes described.

Reviewing what has gone before, the following facts are obvious:

1. The cervical canal is about one inch long and spindle shaped.
2. Infection is generally of the ascending type.
3. The brunt of infection is borne by the lower portion of the cervical canal.
4. The internal os and surrounding area are rarely, if ever, infected.
5. The glands are always infected.
6. The crypts and rugae of the cervical mucous membrane are excellent hiding places for pathogenic organisms.



7. Nabothian cysts result from occlusion of the gland ducts or from pressure.

8. The lining membrane of the cervical canal is one or two millimeters in thickness and has no submucosa, the glands reaching to the basement membrane.

9. Some of the glands extend beyond the basement membrane into the stroma of the cervix.

10. Simple tubular and racemose glands are found, but the latter predominate.

11. The anatomical arrangement of the mucous membrane increases materially the surface area of the canal.

12. The main cervical arterial supply is near the isthmus, thus far removed from the diseased mucous membrane.

Having briefly reviewed the anatomy and histology of the cervix and the pathology of endocervicitis, we come to a consideration of nature's healing process and the possibility of expediting it by treatment of the diseased area. With a clear understanding of how the reparative process progresses, the appropriate treatment suggests itself, thus assuring the patient a more rapid recovery, with a minimum impairment of cervical function, so important in subsequent parturition.

As an inflammation subsides, squamous epithelium proliferates from the sides or regenerates from scattered islets still remaining beneath the columnar epithelium and displacing it. The squamous epithelium enters the neck of the glands and in some cases succeeds in entirely replacing the columnar variety normally lining these glands, filling them with a solid squamous plug and obliterating them. In other cases, only the gland openings are closed and retention or Nabothian cysts result. It is therefore evident that the natural healing process produces the replacement of the columnar epithelium of the cervix by stratified squamous epithelium, while the racemose glands are compressed by a mass of stratified squamous epithelium, which completely fills and obliterates them. These findings are the result of microscopic study of sections removed from healed cervices, three and six months after conization.

The healed cervix differs from the normal in that squamous epithelium has replaced the columnar type and the racemose glands have been filled and obliterated by the inroads of the same variety. Thus nature cures by mechanical obliter-

ation, and any therapeutic procedure capable of producing the same effects is in accordance with the natural curative alterations.

It is conceded that when any of the various popular methods of treatment, short of complete endocervical removal, fails to cure or relieve, a radical tracheloplasty becomes the method of choice, because it completely removes the diseased mucosa with its deeply infected glands. It is attained by a minimum amount of trauma to, and destruction of, the underlying muscular fibres.

If it can be admitted that the obvious method of treating diseased tissue is its removal in its entirety, assuming that such an excision is not inimical to life or future vital function, it logically follows that any such method of treatment becomes the ideal method to adopt in treating diseased tissue, whether in the cervix or elsewhere.

Conization is not based on theory or speculation. It is sound in principle and is based firmly on a foundation of demonstrated facts in the anatomy, histology, and pathology of the cervix. The natural process of healing is not interfered with; on the contrary, it is aided and furthered. While nature attempts to cure by sealing up or obliterating the diseased glands, they still remain in situ, whereas conization removes not only the diseased glands in the mucous membrane lining, but also the tissue in which they are embedded, thereby promoting lymphatic drainage, so important for complete cure. The relining of the cervical canal proceeds rapidly and eventuates in a cervix with intact anatomical structure and a canal lined by squamous instead of the original columnar epithelium.

Conization has for its object the eradication and destruction of the diseased endocervical mucous membrane with its contained glandular structures, and this is accomplished with the preservation of the underlying muscle as well as the uninvolved tissues.

Local anesthesia only is necessary to insure a painless operation, making it an office procedure with no economic loss to the patient.

The instrument used in conization consists essentially of four parts as follows:

1. A metal tube ten or twelve inches long and one-eighth inch in diameter.

2. A silicon tube one and one-half inches long, attached to the distal end of the metal tube.

3. A fine tungsten wire, attached at the metal-silicon junction, its other end fitted into the distal extremity of the silicon tube. This tungsten cutting wire is not straight but describes an arc with its widest portion one-eighth inch distant from the silicon tube. It thus conforms to the normal anatomical contour of the cervical canal which is fusiform or spindle shaped. To facilitate removal of tissue from angles, corners, or for biopsy, applicators with various shaped cutting wires have been made.

4. An insulating sheath of hard rubber encircles the metal tube to within one inch of its proximal extremity.

The applicator is connected directly to the source of current, with a swivel joint that insures perfect freedom of the instrument without movement of the cord.

The instrument is operated from a high frequency machine incorporating a special unit generating an electrical current of high wave frequency supplying unusual power to the cutting wire. This apparatus may be either of the gap or radio tube variety.

#### TECHNIC

1. The patient is placed in the lithotomy position, with legs well separated, and draped in the usual manner.

2. The operator seats himself comfortably before the patient.

3. The vaginal speculum is inserted to expose the cervix.

4. The vagina and cervix are freed of all discharge by swabbing with caroid powder and hydrogen peroxide and wiped dry. It is important that the cervical canal be free of all discharge.

5. A small crystal of cocaine is placed in the cervical canal and allowed to dissolve, or an applicator saturated with 35 per cent solution is introduced into the cervical canal from five to ten minutes.

6. The inactive, wet metal electrode about six by six inches in size, connected to the high frequency machine through a conducting wire, is placed on the abdomen and held firmly in place by means of a strap or sand bag; the patient is directed to make firm compression with both hands, so as to distract her attention.

7. The depth of the cervical canal is measured and the depth on the instrument is noted.

8. The current is turned on until a stage is reached which will provide sufficient current for the operation.

9. The instrument is held firmly in the hand. The other hand steadies the instrument.

10. The tip of the instrument is placed about one-eighth inch from the external os and the foot switch closed, thereby turning on the current. A burning or searing of the tissue should take place.

11. With the current still on, the silicon portion of the instrument is immediately passed into the cervical canal up to the internal os, and with a rotary motion the mucous membrane is coned out.

12. The foot switch is released and the instrument withdrawn. The mucous membrane with its contained cervical glands will be found adhering to the tungsten wire and the silicon tube, and a few drops of blood may appear in the cervical canal.

13. The instrument may be re-introduced and more tissue removed by repeating the previous steps if the operator so desires.

14. An applicator saturated with 2 per cent mercurochrome solution is now placed in the cervical canal and left in situ for several minutes.

15. A light packing of the vagina with gauze moistened with mercurochrome solution, 1 per cent, is all that is needed to control the slight amount of bleeding which might occur.

16. The patient is allowed to leave the table.

17. The entire operation should not take more than a few minutes. About the fourth day a grayish slough will be found filling the cervical canal and is easily removed with a dressing forceps. The cervix and vagina are swabbed with 1 per cent mercurochrome solution. On the seventh day the cervical canal will be found smaller in size and granulation tissue can be seen. Between the second and third weeks the cervix approximates its normal size with only several small unhealed areas visible. About the fourth week the eroded areas are completely covered by squamous stratified epithelium and the entire cervix presents a healthy appearance. Vaginal douches are neither advised nor necessary.



As surgery for cancer of the cervix is generally contraindicated, the loop is used to cut out all diseased tissue possible before applying radium.

I would like to give a resume of 189 patients coned from January, 1927, to January, 1929, and rechecked while I was attending Dr. Hyam's clinic from July 1st to October 1st, 1929.

#### HISTORY OF SYMPTOMS

Discharge .....	70
Backache .....	48
Pain in lower abdomen .....	45
Dysuria .....	9
Metrorrhagia .....	6
Dysmenorrhea .....	5
Pruritus .....	5
Headache .....	4
Sterility .....	4
Menorrhagia .....	2
Dyspareunia .....	2

Discharge, backache, and pains in the lower abdomen were the most frequent symptoms complained of, either alone, or in varying combinations.

#### AGES

Under 20 years .....	1
20-25 years .....	17
25-30 years .....	22
30-35 years .....	28
35-40 years .....	26
Over 40 years .....	17

A study of age incidence shows that in their cases, endocervicitis occurred most frequently after the age of thirty years, but girls have erosions. A German has reported finding an over growth of the columnar epithelium in girls of all ages, back to six months in embryo. That this is a condition which frequently follows childbirth is evidenced by the following.

Sterile .....	17
Miscarriages, one or more .....	37
Para one .....	25
Para two .....	26
Para three or more .....	35
Instrumental delivery .....	14

#### PATIENTS RE-EXAMINED

September, 1929 .....	48
Improved .....	46
Failed, requiring re-conization .....	2
Cervices showing visible scar tissue.....	0
Cervical contractures .....	0
Cervical stricture .....	0

Three women had become pregnant. Three others still showed uterosacral infiltration on examination, but had no discomfort or symptoms.

Eight showed small erosions of a type easily healed by local application. These patients were likewise free of symptoms.

#### ADVANTAGES

1. The method is used for the treatment of ambulatory patients.

2. The patient suffers no pain or discomfort, as the nerve ends are cooked.

3. The symptoms are relieved because the mucous membrane with its contained glands is removed, thus aiding nature in repair and at the same time expediting the healing process.

Healing is more rapid than in an average surgical case left to granulate. The scar is softer and less disfiguring.

4. The danger of subsequent bleeding is practically nil.

5. No muscular tissue is removed, the cervix remaining functionally normal and future parturition is not interfered with mechanically.

6. The technic, easily acquired, can be carried out by the surgeon. The operation, especially in infected areas, is a pleasure.

The cervix need not be drawn down to the vaginal introitus, thus avoiding the possibility of subsequent retrodisplacement of the uterus.

7. The cutting proceeds smoothly, the generated heat assuring asepsis.

Diseased glands are exploded often in situ and caused to absorb. Diseased cells and infection is also destroyed.

8. Tissue can be removed to any desired depth.

9. Conization can be used for removing tissue for the microscopic examination particularly in cases where dilatation and trauma are inadvisable.

10. The procedure may be repeated as often as is deemed advisable to accomplish its object.

11. Removal of the diseased tissue promotes and facilitates lymphatic drainage.

12. Conization results in a minimum of scar tissue because of division of the tissue is accomplished far more accurately than with the finest knife.

Conization is not recommended as a cure-all for any type of gynecological disorder. To insure success all pathology extraneous to the cervix must be carefully looked for and treated. Symptoms due to other causes than endocervicitis must be traced to their site of origin, *e. g.*, a discharge resulting from uterine retrodisplacement must have its own specific treatment.

In conclusion, conization is offered as an additional link in the chain of progressive methods devised and in use to relieve the symptoms of chronic endocervicitis with the least discomfort to the patient.

Medical Arts Bldg.

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#### PRACTICE OF TRAUMATIC SURGERY

Experience warrants the statement of John J. Moorhead, New York (*Journal A. M. A.*, April 11, 1931), that practically three fourths of all traumas fall into the group of contusions, wounds, burns, joint injuries, fractures and dislocations. From the stand point of management of these he believes that certain principles improve the results. Of these may be mentioned the following: Early treatment is important. If definitive measures can be applied within six hours of the onset, complications are minimized to such an extent that the disability period is halved. Mobilization rather than immobilization should be the aim, and if that is attained the need for prolonged physical therapy is minimized. Infrequent dressings limit the chances of secondary infection and also limit the probabilities of stirring up infection in the initial lesion. Delayed operation in infections is increasing his practice and he postpones intervention until localization is accomplished by the use of hot wet dressings, plus elevation and splintage. Operations in fractures and dislocations are featured only when the ordinary closed methods fail after reasonable trial. Anesthesia should be more universally employed. Local infiltration acts well in injuries of the joints. Spinal anesthesia has an established sphere in injuries of the lower extremities. Inhalation anesthesia (gas, oxygen or ether) is aided by the preliminary use of phenobarbital and like preparations. Intravenous anesthesia as yet is too unsafe and uncertain. For two years the author has been experimenting with a portable motorized device for setting fractures and dislocations and liberating stiff joints. He calls this the repositr. The apparatus essentially consists of an electromotor attached to a spring device, which in turn is fastened to a strap or harness attached to the limb. When the motor is started, the strap pulls and then relaxes, so that intermittent traction is applied to the limb instead of the steady pull that has hitherto been employed when manual methods or the fracture table have been used. A pull from zero to 100 pounds can be automatically given, with a variable period of relaxation and at varying speeds. Every fracture and dislocation is set not by setting the bone but by setting the elastic muscles, tendons and ligaments, and hence the importance of intermittent traction as compared with continuous traction. When used with the fluoroscope, this method should make the setting of fractures and dislocations almost automatic and the author is becoming convinced that this device is of value in that group ordinarily regarded as irreducible without operation.

#### SCOLIOSIS: ETIOLOGY, PATHOGENESIS AND PREVENTION OF EXPERIMENTAL ROTARY LATERAL CURVATURE OF SPINE

Eben J. Carey, Milwaukee (*Journal A. M. A.*, Jan. 9, 1932), believes that scoliosis is a spinal sign of the imbalance of muscle and bone growth of the motor system of the back and is not a specific disease entity. The kind and degree of scoliosis are dependent on the extent of the imbalance, caused by the weakening and possible paralysis of multiple combinations and permutations of the muscle groups of the body as a whole. Accurate anatomic and physiologic knowledge of the motor system of the back as a functional whole is necessary for an understanding of pathologic changes in the spine. In chronic infantile inanition and malnutrition there is a decrease in muscle weight and a persistence in skeletal growth in length. The muscles do not degenerate uniformly. This results in unequal pull on the spine and the striking of an abnormal muscle-bone balance. This inequality of muscular atrophy and paralysis upsets the normal dynamic equilibrium of the muscle and bone growth of the spine. Chronic under-feeding or malnutrition of the child during the first decade of life is, therefore, suggested as the insidious cause of idiopathic structural scoliosis. The convexity of the laterally deviated spine may be toward either the stronger or the weaker muscle side. The convexity is toward the weak muscle side when the parallel bowstring muscles are dominantly weakened on the side of the convexity of the primary curve of the scoliotic spine. The convexity is toward the strong muscle side when the superficial transverse-traction-torsion muscles are dominantly weakened on the side of the concavity of the scoliosis. There is a definite lateral deviation of the spine with relatively slight rotation of the bodies of the vertebrae when the large superficial muscles of the body are dominantly imbalanced. There is definite rotation or torsion of the spine with relatively slight lateral displacement when the deep intrinsic muscles of the spine are dominantly imbalanced. In clinical practice there are all combinations of imbalance involving eventually both the superficial and the deep intrinsic muscles of the spine where scoliosis is found. Concave and convex sided rotations of the bodies of the vertebrae are resultants of the imbalance of different groups of muscles of the body as a whole. These facts have been proved experimentally on animals and are demonstrated on the muscle-bone-balance model of the human spine, which visualizes the normal and abnormal dynamic equilibrium of the bilateral body muscles, recorded in the spinal indicator. The problem of scoliosis is, therefore, fundamentally one of prevention of all conditions which upset the normal dynamic balance of muscle and bone during the period of growth, such as chronic inanition and malnutrition, and the various types of chronic diseases, which lead to undernourishment of the growing child. During growth and maturity the components of the motor system of the back differentiate and function as a physiologic, interactive whole and not as a mere mosaic of passive, autonomic and independent anatomic parts. This dynamic point of view is opposed to the static one, which holds that the bone of the spine or any other bone in the body is originated and maintained independent of environment.



# PELLAGRA WITH SPECIAL EMPHASIS ON MENTAL REACTION AND TREATMENT\*

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For the past twenty years pellagra has presented an interesting and somewhat baffling problem to the southern practitioner. You will recall that the word itself means rough skin, and that it was first described almost two-hundred years ago at which time it was endemic as well as epidemic in Spain, Northern Italy, and Egypt. Three distinct epidemics have occurred in the United States. The first in 1909-10-11, and the second in 19-14-15-16, and the present one which began in 1928.

That the incidence of pellagra is still increasing there seems to be little doubt. In Ohio in 1927, there were 16 deaths and in 1928, 21 deaths from pellagra. In South Carolina in 1928, 2905 cases were reported and 4066 in 1929. In North Carolina during the first six months of 1930, there were 1442 cases reported with 468 deaths. In our own State, 597 cases were reported in 1929, and 503 cases in 1930. The Central Oklahoma State Hospital at Norman, admitted 68 pellagra patients in 1929, and 69 in 1930. The Eastern Oklahoma State Hospital at Vinita, admitted 29 and 48 pellagra patients during the corresponding periods. In a bulletin from the Hygienic Laboratory the late Dr. Goldberger and his associates report that they were "convinced that pellagra in an endemic locality is from two to six times more prevalent than the experience of local physicians would indicate." As our Southern States are now passing thru an embarrassing economic situation which increases the prevalence of an unbalanced diet we may well anticipate an even greater number of cases during the coming year.

While there are many theories as to the causative agent, there can be no doubt but that an unbalanced diet has the most to do

with the development of the disease entity. It is undeniably true that there are factors which would make us hesitate to say that diet alone is the only cause. Still the disease most often develops in poverty, in warmer climates where there is a low protein diet. With this low protein diet pellagra has been produced experimentally and with a well balanced diet it has been cured. But the fact that it frequently becomes epidemic, the fact that it is seldom seen in the slums of our northern cities where there is miserable poverty, and where the diet is as low in proteins as in our own south, the fact that the Chinese are practically immune, these with numerous other impressions make us wonder if the diet might merely be the predisposing factor and that the lowered resistance brought about by unbalanced rations properly fertilizes the field for some true causative infection which as yet the medical profession has been unable to isolate.

You are all well acquainted with the general physical symptomatology of pellagra. The symmetrical dermatitis is a general rule and an unmistakable diagnostic aid. It is more marked in the younger, better nourished individuals, but occasionally almost totally lacking in the older and thinner individuals. Thus we sometimes have this latter individual coming in our hospital with a diagnosis of gastritis, gastric ulcers, abdominal malignancy, nervous exhaustion, etc. For this reason all patients suffering from burning sensations in the gastro-intestinal tract, increased salivation, nervous and exhausted, should arouse our suspicion. Attention should be called to the fact that these patients after their first attack often do not show the same skin lesions as in their first attack. Many times there is only a slight bronzing of the skin, possibly a little

\*Read before the Southern Oklahoma Medical Association, Ada, Oklahoma, March 10, 1931.

roughening, but no reddening, or lines of demarcation. Burning sensation thru-out the whole intestinal tract, increased salivation, nervousness, insomnia, with a tendency toward constipation rather than diarrhea are some of the most prominent physical findings in the beginning.

In our State Hospital we seldom see these cases in their incipency. Not until marked mental symptoms have developed are they sent to us. For that reason we are particularly interested in the mental side of the question. The mental reaction of the pellagrin is quite varied. There have been as many types described as there are mental symptoms, these types are useful to the general practitioner only as a means of prognosis, many times typing merely tells us how far the case is advanced. To our minds nervous or mental symptoms are among the earliest to manifest themselves. Third, nervous and exhausted, cannot sleep at night, burning, tingling, numb sensation in the extremities, worried, depressed, utter darkness for the future, loss of interest in their work and in life are early symptoms all complained of. In our clinics at the hospital, merely for convenience sake, we use the following types, *viz*: exhaustive, depressed, manic, praecox reaction, and demented. The majority of these cases seem to come under the exhaustive type. In the early stages this type reminds one of acquired neurasthenia. They feel tired, worn out, are nervous and sleep poorly. They complain of muscular twitching over their bodies, and many somatic troubles centered around their intestinal tract. If the disease is not interrupted at this point it progresses into the amentia stage where there is extreme restlessness, delirium with rising temperature, low mutterings, picking at the bed covers, muscular jerking, denoting meningeal complications. This last amentia stage is frequently called the typhoid type, a type which seldom ever recovers and a type which constitutes practically all the deaths from pellagra in our hospital. Patients of the exhaustive type reaching our hospital before the amentia stage practically all recover.

Occasionally we have a patient come in overactive, very talkative, continuously on the go, somewhat euphoric but clearly oriented. This type we call a manic, because they resemble so closely the manic phase of the manic depressive. While the number of this type is small compared with the others, they seem to have a more favorable prognosis.

The depressed is extremely opposite to the manic type. Here the patient is retarded, depressed, with hypochondriacal ideas and occasional self accusatory delusions. This type too is not so frequently seen and in many instances is so closely related to the exhaustive stage that it might be well to place it in this classification.

The praecox reaction type occurs more frequently in the younger individuals and in our hospital it has been more often noticed in women than men. They seem to develop an unreal attitude toward life. Some have persecutory ideas centered around close friends and relatives and in many ways are little different from dementia praecox, paranoid type. Others develop bizarre, depressive delusions, concerning their body organs reminding us more or less of the hebephrenic type. This type usually deteriorates and a few years later it is almost impossible to differentiate it from the demented type.

In the demented class of patients we have, next to the exhaustive, our most numerous type. These patients besides having a whole host of physical symptoms seem dull, listless, forgetful, have no ambition, and no interest in life whatever. They sit around content to be waited upon, expressing no desires, assume no responsibility but usually live for years in this demented state, unless some intercurrent disease such as pneumonia, influenza or tuberculosis intervenes. Many of our chronic alcoholics develop pellagra, and when they develop mental symptoms they almost invariably fall in the demented type. The women being weaker physically, seem more inclined to develop the exhaustive psychoses while the men seem to fall more often in the demented class.

A great deal has been written concerning pellagra developing in the insane. Since 1915, we can recall but two cases developing within the walls of the Central Oklahoma State Hospital. We can readily see that if the diets were not well balanced and if the patients were not properly supervised at their meals how easy it would be for many of the insane to become pellagrins. It is true that many of these are weak, emaciated, depressed, suicidal, or imagine the food is being poisoned and for these and other reasons refuse nourishment. But in well regulated hospitals, well balanced diet with careful nursing can practically eliminate the development of pellagra. In other words we



do not believe that insanity should be considered a cause for pellagra and that if it develops persistently within the wards of a hospital there is something lacking in the management of the institution. Statistics show at least 10% of all pellagrins become insane.

In a disease as serious as pellagra one would expect necropsy to show much pathology. However such is not the case. From the beginning of the disease there seems a noticeable secondary anemia, a decrease of hydrochloric acid in the stomach, a lowering of the blood pressure, a rather rapid sedimentation of the red cells, and an increase in the monocytic count. There is nothing in the urine of particular importance and nothing in the cerebro-spinal fluid. An inflammation of the intestinal mucosa is found, and occasionally ulcers in the colon. Pusey states that the skin has an increased pigmentation with hyperkeratosis. There seems to be infiltration of the dermis, with edema of the connective tissues under the dermis. He further states that in the brain there is often noticed a pachymeningitis and also many inflammatory changes in the spinal membranes. Other changes in the nervous system are those usually found in other chronic exhaustive toxic states not necessarily pathognomonic of pellagra.

In the treatment of pellagra there are three outstanding factors which should be stressed, *viz*: preventive measures, rest, and diet. The disease if taken early, like most any other malady, can be very successfully coped with. Taken late, though many do not die, we have a continual fight with these two chronic symptoms, gastritis and dementia which eternally refuse to be mastered. To prevent pellagra, education of the laboring classes of the south is essential. If we had some real outstanding social workers make a canvass of these districts, going into each household telling these people what to eat and how to live to prevent pellegra, this might help some. Still these are classes in which extreme tact would be necessary to place them in a receptive mood to follow out the instructions, some because of their pride, others because of ignorance and indifference. In checking and informing these households each social worker could report to the Red Cross the families totally unable to furnish a well balanced diet and in these particular cases yeast could be furnished by this organization which if used regularly would doubtless prevent the

development of pellagra. We believe that two or three pellagrasoria should be established in Southern Oklahoma, where patients could be sent in the incipency of the disease before mental symptoms have developed. These should be operated at the expense of the state and not in connection with the insane hospital. Here the patients could feel at ease to go where they would have a change of environment, where they would have rest, diet and freedom from responsibilities.

We are of the opinion that rest in pellagra is just as important as in tuberculosis. To build up a devastated physical and nervous system nothing can take its place. We put our patient at absolute rest in bed until physical signs have practically disappeared, after which we graduate their exercise as in tuberculosis. All this time we are forcing fluids, particularly milk and extracts of fresh beef. If there is not too much gastric distress we push a high protein diet consisting of milk, eggs, fresh beef, leafy vegetables, spinach, cabbage, lettuce, beans, peas, carrots, etc., eliminating as far as possible, the carbohydrates. We believe in dried brewers' yeast. We have found that practically all cases take it satisfactorily. There are some few in whom it causes gastric distress, and there are some few that have such a severe diarrhea that yeast seems more detrimental than beneficial. In these cases we try to eliminate the diarrhea by a diet of fresh beef extract, milk and orange juice. Occasionally they take soft poached eggs very nicely. We doubt the advisability of opium in these diarrheas, neither have we gotten satisfactory results from astringents. Arsphenamine has been recommended intravenously and on some few occasions we have seemed to get good results from the same. Dr. Adams at Vinita highly recommends caroid, a protein digestive. We have used it quite a bit with fair results. Generally speaking we do not recommend the arsenical preparations from a curative standpoint. We do believe that diluted hydrochloric acid is quite an aid in cases where there is a lack of this digestive in the stomach.

Frequent baths, careful massaging of the extremities in the neuritic types are recommended. The mouth should be properly cared for, diseased gums and teeth particularly where Vincent's spirilla are found, should be thoroughly treated. For the stomatitis, frequent alkaline mouth washes should be used. The majority of

our cases are constipated. Laxatives should be given very carefully if at all. Constipation is much preferred to diarrhea, which is often started by free use of cathartics. As a general rule enemas and diet will take care of the constipation. We are firm believers in diet, rest, proper hygienic, and educational measures, and very little medicine in the treatment of pellagra.

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### THALLIUM POISONING

The report of H. M. Ginsburg and C. E. Nixon, Fresno, Calif. (Journal A.M.A., March 26, 1932), deals with eleven cases of poisoning from the use of barley mixed with thallium sulphate for use as a rodent poison. After the barley had been ground, tortillas (A Mexican bread made by mixing flour and water and rolling the dough into thin cakes) were made from the whole grain. These patients gave a uniform history of onset of symptoms twenty-four hours after partaking of the tortillas. The first symptoms noticed were a tingling sensation and pains in the hands and feet, followed by severe paroxysmal abdominal pains and vomiting. No diarrhea was observed. Shortly after the first manifestations, weakness of the extremities developed. This weakness did not involve any particular muscle group except that it was more marked peripherally than proximally. Patients were afebrile but with an acceleration of the pulse rate. The blood picture in the first two to five days was normal. The urine showed traces of albumin and hyaline casts. In all cases there was a marked stomatitis. Some exhibited a purplish line at the junction of the teeth and gums. Marked salivation was present in all cases. Bleb formation appeared on the lips; the breath was foul. Within two to five days after the onset, all patients showed evidence of cerebral involvement manifested by cranial nerve palsies and disturbed sensorium and choreiform or myoclonic movements of the extremities and the head. Among the cranial nerve manifestations, ptosis, strabismus and dilated pupils which reacted feebly to light were prominent. Falling out of the hair occurred in all these patients at this time. The deep reflexes varied from time to time in the individual patient as well as in the different patients. In no instance were they lost and at times they were exaggerated. No pathologic reflexes were present. In the more toxic cases convulsions occurred, which were followed by a marked delirium, after which patients became comatose and died of respiratory failure. Within twenty-four to forty-eight hours prior to death there was an elevation of temperature up to 103 F. with pathologic changes in the chest indicative of a bronchopneumonia or pulmonary edema. In the treatment of these patients the authors used sodium thiosulphate intravenously, 1 Gm. doses twice a day for adults, and 0.5 Gm. doses for children. After this treatment was discontinued because of its apparent failure, sodium iodide was similarly given in 2 Gm. doses. Two of the patients were given calcium lactate and parathyroid extract. In addition to these, dextrose and salt solutions and other symptomatic therapeutic measures were used as indicated.

### SHOULD THE BARRIERS AGAINST TYPHOID BE CONTINUED?

According to James G. Cummings, Washington, D. C. (Journal A.M.A., Jan. 9, 1932), the control of typhoid is the result of blocking the major avenues of infection distribution. This continuous blocking process through the purification of milk and water has successively reduced the number of new cases in each human cycle of typhoid fever. Thus there has been an automatic reduction in the number of healthy carriers, both because those produced before sanitary control measures were perfected are gradually dying off and because each newly produced group consists of a progressively diminishing number. All of which means that there is a cumulative decrease in both cases and carriers with each succeeding year. Present-day typhoid is perhaps all, or nearly all, of carrier origin, through food contamination. This and other minor routes of distribution are, however, of but limited importance in control leading to eradication, because the major avenues, water and milk supplies, are effectively blocked. The reduction of typhoid mortality by 98 per cent does not mean that the barriers against distribution may be lowered, for this reduction is no criterion of the potential dangers of infection distribution. Healthy carriers are still one half as prevalent as in 1910. To reach "the vanishing point" of the typhoid carrier will require at least another quarter of a century. In the meantime, the barriers against transmission cannot be lowered; the purification of public water supplies must be maintained; the pasteurization of milk must be enforced, and, in addition, higher standards of personal hygiene must become the everyday practice of the everyday man.

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### VENOUS PRESSURE

In the experience of J. A. E. Eyser, Madison, Wis. (Journal A. M. A., Oct. 31, 1931), the venous overload associated with extreme physical activity in man or the experimental animal does not lead to dilatation and hypertrophy of the heart so long as the heart is normal. Whether or not a high venous pressure leads to cardiac muscle injury with dilatation and subsequent hypertrophy seems to depend on two factors: the extent of the venous overload and the protective influence of the pericardium. With the pericardium intact, the restraining influence is sufficient to prevent injury except when the normal load is greatly exceeded as a result of valve injury, orifice constriction or massive increase of blood volume. On the other hand, with the restraining influence of the pericardium absent, damage may result from the high venous pressure associated with severe muscular exertion. With the process of dilatation and hypertrophy once initiated, subsequent exposure to high venous pressure appears to lead to greater changes than would otherwise appear. The importance of the protection of the heart, already the seat of myocardial injury and hypertrophy, from high venous pressure would thus appear obvious, not alone from the general rule that a diseased organ is injured by overwork, but from experimental observations that suggest a rational explanation as to the mechanism by which this further damage occurs.



# PATHOLOGICAL UTERINE FUNDUS BLEEDING IN EARLY AND LATE CHILD-BEARING PERIODS\*

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We will consider in this paper the cyclic pathological uterine bleeding, or menorrhagia, seen near puberty and near the menopause. Practically all of these patients are puzzling because of the intimate etiological relation of the endocrine glands, particularly the pituitary and thyroid. The menorrhagia may be a most distressing symptom of underlying pathology of the glandular system. The amenorrhea seen so frequently in disease of the endocrine system is of diagnostic importance and every effort should be made to control the lack of balance. However, the control of the menorrhagias is far more pressing and indeed not infrequently vital.

The mechanism of the normal uterine fundus bleeding is absolutely dependent on the presence of normally active ovarian tissue. Numerous experimental work and clinical experience prove that this bleeding does not occur if the ovaries are absent. You will immediately recall patients who have undergone bilateral oophorectomy and continued to menstruate. It is my experience that in all such cases there is considerable doubt as to the complete extirpation of both ovaries, usually due to the operative difficulties associated with pelvic inflammatory disease. There is no question that certain pathology of the pituitary and thyroid causes abnormal uterine bleeding. It must be remembered that in so doing the ovaries are utilized as a station of retransmission or reformation of the hormonal stimulus.

Therefore it is axiomatic that uterine bleeding depends upon the presence of the ovarian tissue, of course excluding that bleeding arising from intra-uterine pathology. Even in this latter instance many of us are coming to believe that the presence of ovarian tissue is far more important than was previously thought. It then follows that pathology of the menstrual flow or what has been known as function-

al bleeding has its origin in abnormal secretion of the ovaries, originating in it alone or influenced by the associated endocrine gland hormones. Such is the etiological foundation for our present presentation.

## I.

The menorrhagias near puberty fall essentially into two types with two subgroups to the second type.

1. The first type is characterized by a rather fat girl, who has no palpable pathology of the ovaries. There is: A fairly normal frame but usually smaller than normal bones, long tapering fingers, cool, soft, dry skin, scant hair, abnormal fat distribution, history of profuse flowing at irregular intervals but no typical metrorrhagia, history of frequent curettage or other gynecological operations without permanent relief, low basal metabolism rate, no breast soreness pre-menstrually, and interestingly enough frequently atrophic or hypoplastic endometrium.

The case history of such a patient is that of Miss B. A., twenty-one years of age, a school teacher, who entered St. Anthony's Hospital on February 20, 1930 (about twenty-one months ago). Since onset of menstruation at eleven years she had had several periods of prolonged and profuse menstruation though the average was only about seven days. In 1925, D. and C. was done following great loss of blood.

On admission she had been flowing freely for eight days and the red count was 2,030,000 with haemoglobin forty per cent. Her pulse was 110 and of poor volume. She was pale, cold, clammy and listless, and flowing profusely.

She was a large girl with an abnormal amount of fat particularly at the hips. The breasts were small, the fingers tapering and there was a scant hair distribution.

\*From The LeRoy Long Clinic, 714 Medical Arts Building, Oklahoma City.

A transfusion of five hundred c.c. of compatible blood was done followed by diagnostic curettage and a very small dosage of intra-uterine radium element. There was immediate cessation of flow and she was discharged on March 9, 1930, with a red blood count of 3,060,000 and haemoglobin of forty-six percent. The microscopic examination of the endometrium showed atrophy of the glands and connective tissue.

For two months following the radium she had only a scant flow for three days which occurred about six weeks after the procedure. Then she menstruated about every six to seven weeks for the next seven or eight months and now for nearly a year she has menstruated fairly regularly every four to five weeks with a duration of five or six days and using two to three pads a day.

Her general condition is good and she is able to carry out her duties as a school teacher in a normal manner. Her red blood count in January, 1931, was 4,090,000 and haemoglobin seventy-five percent. I see no reason why she should not continue a relatively normal menstrual life and probably have future pregnancies.

2. The second type is characterized by the slender girl with palpable pathology of the ovaries. The general characteristics of both sub-groups are: normal skeleton, scant fat, more and coarser hair than normal with tendency to male distribution, not infrequently fibro-adenoma of the breasts, pre-menstrual breast soreness and family history of many operations for bleeding. These are the patients whom we frequently later have to treat for fibromyoma and they are also the women who sometimes in later life become stout and have menorrhagia.

(a) The first sub-group includes those who have menstruated fairly normally but suddenly begin to have lengthening of the menstrual time and the amount of blood, superimposed on the fairly normal menstrual history. These women usually have a single ovarian cyst of fair proportion and its removal reestablishes their former menstrual stability.

An example of this sub-group is the history of Miss F. R., a slender girl of twenty-four. She had always been normal in her menstrual flow with periods of three to four days duration until four months before seen when the duration of her

menstrual flow increased to seven days and she began to use three to four napkins a day, where she formerly had used only one or two.

Pelvic examination revealed a single cyst in the right ovary. This cyst was removed at operation on October 19, 1930, and subsequently she has had menstrual flow with regular twenty-eight day intervals and four days duration with one to two napkins a day.

(b.) The second sub-group is characterized by an irregular menstrual cycle from the start with menstrual flow longer than normal and usually bilateral polycystic enlargement of the ovaries. Remarkably enough the red blood count in these women stays moderately normal.

An example of this sub-group is the case of Miss C. W. When first seen she was twenty-one years of age and a stenographer by occupation. She is slender, has normally developed breasts but rather more and coarser hair than is typically seen in the female.

She began to menstruate at thirteen and has always been irregular with one to six weeks intervals and a duration of menstrual periods of two to three weeks. At examination both ovaries were found to be enlarged and cystic. A complete laboratory examination, to rule out constitutional causes, revealed no interesting pathology.

She was given corpus luteum by mouth and hypodermically, and various other endocrine preparations without any relief.

After about seven months she was operated upon with a partial resection of both ovaries which was necessary to remove the cysts. This was twelve months ago and while she has somewhat longer and somewhat more regular intervals she still menstruates for two to three weeks at a time. The amount is about one-half, what it used to be and she says that she feels better than she has for years. An interesting feature is the fact that for only four to five days in each month is the flow of any consequence and she has a normal blood count.

Radio-therapy is not as clearly indicated here as in the first type because of the usual good condition of the patient in spite of long, steady loss of blood, and when used should be used in only small trial dosages.



## II.

Menorrhagia near the menopause. These cases fall most commonly into three groups.

1. Hyperplastic endometrium with enlarged uterus.
2. Obese woman with normal basal metabolism rate.
3. Sub-mucus fibro myomata uteri.

1. The clinical picture of hyperplastic endometrium is unfortunately a not uncommon condition. In these patients it is difficult to find abnormality in their sexual, menstrual or social history previous to the present illness. They are of normal skeleton, normal fat distribution and have usually been normally fertile. Their problem lies principally in abnormal loss of blood in cyclic intervals.

Diagnostic curettage shows hyperplastic endometrium and occasionally adenoma malignum.

It is probable that many of these patients have the initial cause in pathologic physiology of the pituitary glands. It is always well, because of the wisdom of using less severe remedies first, to attempt glandular therapy, but at the present time they usually do little good.

Some of these women may be entirely readjusted by curettage. However, most of them are best treated with a diagnostic curettage followed by the production of an artificial menopause with the use of intra-uterine radium.

I take this opportunity to discuss a pernicious custom that has grown up in some parts of our country. I refer to the use of the powerful therapeutic agents, X-ray and radium, without a positive microscopic diagnosis. Aside from the minor advantages, the small percentage of cases of malignancy make it imperative for the safety of our patients to have a microscopic diagnosis which is one of the foundation stones of the practice of modern medicine.

Most physicians feel that they can diagnose the pathology as either benign or malignant. However, I was interested to learn in conversation with Dr. Jeff Miller, last spring, that in the last year in his private practice alone they had found five cases which had had benign pre-operative diagnosis, only to have a microscopic examination of the curettings reveal malignancy.

In my work with Dr. Howard Taylor it was about the same story. These men are well known and capable gynecologists who fail occasionally to make the diagnosis of malignancy without curettage. In the January, 1931, issue of Radiology a radiologist, L. J. Carter, of the Bigelow Clinic of Brandon, Manitoba, reported three cases of subsequently proven malignancy in a series of one hundred cases in the X-ray treatment of menorrhagia of the menopause and uterine fibroids.

With these facts at hand it is not a matter of choice as to procedure.

2. The second type is characterized by obesity in the late thirties and forties with a rapid gain in weight and long periods of uterine bleeding. Previously they have had irregular menstrual cycles and ordinarily have been sterile or relatively sterile. They appear sluggish and apathetic. The X-ray of the sella turcica is normal. The basal metabolism rate is usually about normal.

Such a patient is Mrs. E. T. M., age 38, next first seen in late December, 1930, for uterine bleeding of six months duration. Her menstrual periods have always been irregular, varying from three to eight weeks in intervals and usually of four days duration. Up to six years ago she was stout but in the past six years she has gained a great deal of weight. She has had no pregnancies. At examination she was a woman well over two hundred pounds, with dry skin, scant hair distribution and apathetic outlook. Pelvic examination showed a firm vagina, slightly enlarged uterus and normal adnexae.

A strict reduction in weight was initiated and glandular therapy started by her doctor. During the first two and one-half months she lost over forty pounds in weight, now feels much better than in the past six years and the menstrual flow is regular monthly and of four days duration. These women are not rare.

Women who have gained large amounts of weight rapidly usually have a reduction in the amount of flow and occasionally dysmenorrhea. The reduction in the weight will, in these individuals, increase the flow, whereas in the type discussed above reduction in the weight will diminish the flow. Whether or not this disturbance is an endocrine imbalance or merely faulty nutritional metabolism we are not prepared at present to say, but it does

seem rational to conclude that it is not entirely an endocrine situation.

3. Menorrhagia associated with submucous fibro-myomata is a story in itself. Suffice it to say that these patients should be carefully differentiated from the two preceding types if the proper therapy and results are to be obtained. It is my belief that most of these patients are suffering primarily from ovarian pathology and that the fibro myomata are the end result rather than the initiating cause of the abnormal bleeding encountered.

I think it well to add here, mention of the cases of adenoma malignum and adeno carcinoma because it is becoming the accepted theory that these diseases are all stages in a metaphasia of the endometrial glandular tissue, and that there is a very close association between hyperplastic endometrium, adenoma malignum and adeno-carcinoma.

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#### SOME RECENT ADVANCES IN THE CHEMISTRY OF NUTRITION

H. C. Sherman, New York (Journal A. M. A., Nov. 14, 1931), first considers vitamin G, recently differentiated from vitamin B. It seems to be true of vitamin G, as also of vitamins A and C, that the optimal amount is much higher than the minimal ("actual") requirement; in other words, that the body is able to make good use of a much more liberal intake than can be proved to be absolutely necessary. In the recent experiments of Ellis in the author's laboratory it has been found that, with food consumption practically the same per unit of body weight at a given age, growth and development continued to show a favorable response to increased liberality of vitamin G intake well above what suffices to prevent any actual sign of deficiency. Vitamin G also appears to contribute to the betterment of longevity induced by Sherman and Campbell through improvement of an already adequate diet. Thus, although the existence of vitamin G has been but recently recognized, there is already evidence that it is a nutritional factor of very far-reaching significance. The vitamin G which is thus designated at present as a nutritional factor may include more than one chemically individual substance. Several workers have found reason to think that the substance essential to growth and that which protects from dermatitis are different, or that more than one growth essential may here be involved, or that both these possibilities may be true. It now appears that the present vitamin G is probably a multiple rather than a simple factor; but, if this proves true, it will detract nothing from the importance of this factor to nutrition and health. Probably each of the vitamins A, C and D bears an important relation to the metabolism of calcium and phosphorus in the development of bones and teeth. Especially as regards the relationship between vitamin D and calcium there is now a wealth of evidence, much of which is very recent. Vitamin D undoubtedly plays a significant part

in promoting the orderly development of the bones and teeth; but the evidence is conflicting as to how far it is a calcium conserving and how far only a calcium and phosphorus mobilizing factor. In the enthusiasm of the past few years, there has probably been a tendency to expect too much of vitamin D. Quite recently, however, two of the most active and thoroughgoing groups of workers in this field, the Wisconsin group on the one hand and Shohl and his co-workers on the other, have pointed out with emphasis and cogency that neither irradiation nor the ingestion of vitamin D is a panacea for the problems of the calcium requirement and that, while the vitamin influences the intermediary metabolism of calcium, the supplying of the body's quantitative needs must depend on the calcium content of the intake. Both the published and the unpublished observations of the author's laboratory are also in accord with this view. While fully recognizing that the experimental evidence is in some respects conflicting and that there is still some divergence of opinion among investigators, one should conclude that after much study of vitamin D the importance of liberal calcium intake is more fully established now than it has appeared to be at any previous time. Probably a larger proportion of the ordinary dietaries, both of adults and of children, can be improved by enrichment in calcium than in any other one chemical element. Optimal calcium retention in the growing child requires the joint action of a liberal provision of the antirachitic factor (whether by mouth or through the action of light on the skin) and a liberal intake of calcium in the food. For different individual children the calcium intake that will just support an optimal storage may range from 0.75 to 1 Gm. daily, the latter figure being a reasonably safe allowance to cover individual variations. When the calcium intake is less liberal, the body may still be able to store calcium, but usually not at an optimal rate. Optimal development of the growing body involves the retention of relatively more of calcium than of other body-building material, for there must be an increase in the percentage of calcium in the body at the same time that it is growing rapidly in size and weight. Under these conditions, the optimal rate of calcium retention is the maximal rate that the healthy growing body can attain, and to fall short of this is for the body to remain calcium-poor as compared with what the calcium content should be, for the best development, at the given age. In the improvement in health and longevity through better dietary one should not look for quick results. One of the most impressive features in recent discoveries regarding the relations of food to health and vitality is that the benefit of better feeding usually becomes fully apparent only when it is continued throughout a large part of the life-cycle, and often the benefit is greater to the second generation than to the first. While this may seem slow from the standpoint of therapeutics, it would also seem to indicate that the effects of food on vitality may be fundamental and far-reaching. Through simply a wiser emphasis in the daily choice and use of ordinary staple foods there may result improvements in the vitality of the individual or the family, all well within the bounds of normal nutrition but of very real significance for the maintenance of health from disease.



# CERVICITIS

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Cervicitis is a disease about which much has been written and a great deal learned in the past few years. I believe the evolution of our ideas of cervicitis has kept pace with those of other lines of endeavor. The subject is too big to cover minutely in this paper but I hope to give you a few of what I consider important observations of recognized investigators in this work, and add my own limited experience.

Cervicitis and endocervicitis denote degree of involvement of the cervix and for practical purposes may be considered as one. Acute cervicitis is so rarely recognized as such, it is seldom considered as a pathologic entity. Suffice to say that if there is an acute cervicitis, it is regarded as a part of some general infection of the genital tract and treated as such, terminating shortly in cure or becoming the sub-acute or chronic cervicitis I wish to discuss.

Infections of the cervix are so common some authorities contend eighty per cent of all women harbor this infection. We have come to consider the infected cervix with great concern, not only for its disturbance of the function of pelvic organs, but as one, if not the greatest, source of systemic infection in the female.

The pathology of cervicitis has long been familiar, but the treatment, other than palliative or surgical, has been of little consequence until of late years. In order to have a working knowledge of the fundamentals of treatment, it is necessary to know that the cervix contains large numbers of racemose glands that are deeply penetrating and evince a marked susceptibility to infection. The cervical canal and the glands are lined with columnar epithelium, which from constant stimulation from infection pushes itself out on the vaginal aspect of the cervical rim, displacing the normal stratified epithelium, producing the so-called erosin. Continued congestion incident to such a condition produces a hypersecretion of mucous from the glandular structure and a hypertrophy and hyperplasia of cervical connective tissue. Sooner or later, this hyperplasia of connective tissue, plus the encroachment of

squamous epithelium upon the outlet of the glands causes occlusion and subsequent cyst formation, nabothian cysts.

Being mindful of the incidence of this malady the physician should keep foremost in his mind some of the symptoms which might arise from this source. He should be as careful of the examination of the cervix as he is of the tonsils or other possible foci of infection. It is a well recognized fact that only a minority of women suffering with a diseased cervix refer to these parts as a possible cause of their trouble. But by careful interrogation and examination of the pelvic organs, we will discover many unsuspected cases. Only those seeking relief from a leucorrheal discharge are apt to mention that they suffer from a chain of symptoms indicative of pelvic trouble. And, in this connection I want to emphasize the high incidence of cervicitis in leucorrhoeas and deplore the seeming indifference of our profession to this symptom. Too often the patient is dismissed with a gesture at therapy that is worse than nothing, *namely*: douching with the innumerable nostrums calculated to cure this disease. Douches will no more cure a chronically infected cervix than will gargling cure a chronically infected tonsil. The douche may be indicated for cleansing purposes and as a feeble means of applying heat to the structures, but some form of therapy designed to destroy these deep penetrating glands is essential to cure.

May I stress the importance of the two principal etiological factors that are amenable to treatment, and suggest methods of prophylaxis? One is traumatism and laceration of the cervix in parturition. Every post partum patient should be kept under observation until every vestige of injury to the cervix has cleared up. In the event of erosin or other evidence of infection, it should be treated the same as the cases that are of longer duration. This may prevent the inevitable extension of the infection into the contiguous and adjacent structures, causing metritis, perimetritis, salpingo-oophoritis and finally peritonitis with their attendant symptoms.

Another, and perhaps the greatest source of infection, is the male. While the gonococcus is one of the chief exciting causes from this source, the associated organisms are much more persistent in their duration. Gonorrheal infection of both male and female tends to be self-limited. Relatively few latent gonococci persist, but the streptococcus, staphylococcus and colon bacillus that have been instrumental in eliminating the gonococcus, persist indefinitely in the glandular structures of both. So the cervix is constantly exposed to reinfection from the prostate in the male. Therefore, it is imperative that this source of infection be removed.

The diagnosis of cervicitis is usually obvious; leucorrhea or excessive secretion of mucous is always present; there may be demonstrable swelling and discoloration, erosion and pustular or cystic enlargement of the glands, tenderness of the cervix or tenderness and swelling of adjacent structures, depending upon the extent of metastasis. In some cases there may be only an excess of the mucous secretion from the endocervix, but this symptom alone is sufficient to warrant therapeusis.

In this connection I wish to call attention to the frequency of vesical irritation from an infected cervix. Many patients seek relief from bladder trouble when in fact the cervix may have caused this irritation by extension of the infection and inflammation by contiguity of tissue to the bladder wall. Moreover, there is a chronic stasis in the blood and lymph channels from mechanical obstruction that may extend to and through any and all the contiguous structures, resulting in extravasation of serum into the tissues, producing oedema and swelling of any one or more of the pelvic organs, with their resultant symptoms: backache, pain and fullness in the pelvis, menstrual dyscrasias and sterility. It is thought by some that the orderly cell proliferation incident to these changes is but a forerunner of the more highly disorganized cell formation of malignancy. Hence the necessity for eradication.

Palliative treatment as mentioned above offers nothing permanent. In the absence of more potent therapeutic facilities, however, one might be justified in using topical applications, dehydration with hypertonic solutions, application of radiant and conducted heat, rest and sedation. But the destruction of the chronically infected tis-

sue may now be accomplished without the more radical amputation or modifications of it practiced in the past. While the operative removal of diseased cervical tissue has and will continue to have a place in the treatment of these cases, the indications for operations have greatly diminished with the advent of various electric modalities: X-ray and radium. The use of X-ray and radium are limited by the same conditions. They cannot be wisely used before nor during the child bearing period on account of the uncertainty of the extent of their effects. In later years, either or both may be the treatment of choice because of the absence of discomfort to the patient in their use, and their potency in destruction of malignant tissue.

The method of treatment most used at this time is much more satisfactory to physician and patient than that formerly used, on account of its simplicity. It is much easier to secure the acquiescence in and cooperation of the patient to a simple office procedure, with little or no pain, loss of time or mutilation, than to procure their consent to an operation of serious proportions that will require hospitalization.

The cautery is the modality most used because of its simplicity of application and the relative inexpensiveness of the instrument. I think it particularly applicable in the cases of simple erosion or simple hypertrophy where the hyperplastic connective tissue has already destroyed most of the glandular structures by encroachment. I use it almost routinely for the first treatment of the chronically infected cervix, regardless of the local variance of pathology. The linear stripping of the diseased mass, about one-twentieth of an inch in depth, is the method in vogue. After lapse of time, varying from three weeks to two months, the treatment is selected to meet the individual requirements. If there are isolated pustules or nabothian cysts, they are treated by electro-coagulation and treatment repeated at similar intervals as long as they can be identified. If discharge from the cervical canal persists, it is evidence of continued infection higher in the cervix. I believe much more satisfactory results are obtained in these cases by electro-coagulation. My personal preference of means of accomplishing this is the bipolar electrode. One objection to the use of the cautery in the deeper tissues is that it disperses its heat soon after coming in contact with the tissues, and cannot be



depended upon to deliver coagulation current in the deep glands and cervical canal. If it is held in contact and given sufficient current to destroy the deeper tissues, there is far too much destruction at the point of contact. Whereas, the coagulation electrode gives uniform heat throughout its length. The operator should keep in mind the tendency of dormant infections, particularly of the cervix, to become virulent upon manipulation of the part. Occasionally a violent adenexal or peritoneal inflammation may be excited by simple examination of the inflamed cervix. Certainly no active treatment of the cervix is permissible when the slightest doubt exists as to the quiescence of the infection. There is still doubt in my mind as to the efficacy of topical applications to hasten resolution of the denuded areas. I do believe that cleanliness facilitates healing and certainly adds to the patient's comfort. There can be no objection to the use of hot sitz baths, diathermy, sedative drugs and other measures that contribute to the patient's general well being.

There are few gynecological conditions so neglected, yet so amenable to treatment, and none in which the results of treatment are more gratifying.

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#### EPIDEMIOLOGY OF SCARLET FEVER: CLINICAL APPROACH

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J. E. Gordon, Detroit (Journal A. M. A., Feb. 13, 1932), presents results of a study of the efficiency of two methods for release of patients after scarlet fever. One method that he studied represented accepted practice—an isolation period of twenty-eight days for uncomplicated cases and release of patients with complicated cases thereafter on clinical recovery, with a maximum restriction of fifty-six days. The second method included the same minimum requirements for uncomplicated cases, but patients with complications were released when two successive cultures from the affected part were found free from streptococci. The infecting case rate was essentially the same under two conditions. The bacteriologic control possessed the advantages of prescribing an isolation better suited to the requirements of each individual patient. This method materially reduced the average period of isolation. The gain was entirely in the group having complications, patients ordinarily hospitalized for the longest periods. Simple uncomplicated cases, because of present legal requirements, showed no variation. The patient with complications is responsible for most secondary cases. Attempted control by cultures for hemolytic streptococci gave results in no way comparable to the rate established by simple infections. The method possesses the value of generally decreasing the required period of isolation. The number of hospital days was appreciably less when patients were so released, and the results were essentially as good from the standpoint of infecting cases. An appreciable gain was thus made in respect to time lost from em-

ployment or from school. Patients with certain complications were safely released before complete recovery. From a clinical standpoint, this is no small consideration. Chronic suppurative conditions are more likely to progress favorably with outdoor exercise and lessened restriction of activity. Epidemiologic data of particular value have been made available as a result of release on a bacteriologic basis. The general reliability of the method varies with the kind of case and the kind of complication. No advantage seemingly results from requiring negative cultures of simple cases at the end of twenty-eight days. The infecting case rate was not greater for those proved carriers than for patients free from the infectious agent. The outstanding position of the complicated case as the chief problem in the control of scarlet fever has been demonstrated. Certain complications are more likely than others to disseminate the infection. In order, rhinitis and sinusitis rank first, followed by secondary throat infections and suppurative otitis media. The latter complication under bacteriologic control is no more a source of danger than the simple uncomplicated case, and patients may be safely released before clinical recovery. Clinical classification has demonstrated that certain forms of rhinitis are without particular hazard; others are extremely likely to result in secondary cases. Evidence has accumulated to show that patients of the older age groups could very safely have been dismissed at an earlier period. During certain times of the year the secondary case rate was materially lower. The practicability of shorter periods of isolation during late spring and summer should be further investigated. The author's study indicates the existence of significant clinical differences among patients, permitting practical modification of isolation. This approach to the problem is suggested by the precept of individual consideration, from the acute stage through convalescence to release. The evaluation of communicability by clinical methods, including laboratory procedures, gives promise of more adequate and more equalized control.

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#### NORMS OF REFRACTION

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Edward Jackson, Denver (Journal A.M.A., Jan. 9, 1932), states that norms representing the usual changes of refraction of the human eye, throughout life, could be obtained by comparing records of refractive changes in a sufficient number of patients, under observation from early childhood to old age. But such records are nowhere available. The complete study of such records as have been obtained of private patients, particularly those who have returned to get their refraction retested over several years, will give the best approximation to the desired norms of refraction. When a sufficient number of such studies, made independently, have been obtained with the best methods of studying refraction and with a care commensurate with the supreme importance of accurate correction of refractive errors, static and dynamic, there will be a basis for a philosophy, or theory of the correction of refractive errors that will free both the medical profession and the public from the dangers of plausible assumptions by spectacle salesmen, whether they call themselves optometrists or doctors. The author's paper is a collection, from the case records of thirty years, of data bearing on each norm sought.

# PRESENT DAY INDICATIONS FOR CESAREAN SECTION\*

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Cesarean section is well known as an age old operation. Far back beyond the days of authentic history we are lead to believe that cesarean sections were rather frequently being done. There is no place in medical history where more radical changes have been made than in the *indications* for this operation.

In the beginning cesarean operations were done only on the dead or dying mother for the purpose of saving the child. Now days we do a section to save the life of the mother and the baby; giving the mother the benefit of the first and best chance. We learn that the first sections on the living were probably done in the sixteenth century. The death rate was considerably over fifty percent on account of infection and hemorrhage. This of course retarded the popularity which was never regained until after the introduction of antiseptics into modern surgery. After the days of the great Porro of Pavia in 1877, there has been an ever changing and increasing indication for cesarean section. Likewise the technique has been modernized and improved.

The indications for cesarean section in the year of 1500, can be expressed thusly in one sentence: "A dead or dying woman near term who probably has a living child." Attempts to increase the indications in the next 300 years were many, but ended fruitlessly. Infection and hemorrhage were such dominant contra-indications that no progress was made until some fifty years ago when infection became controllable thru antiseptics. From that time until now the mortality has been reduced from 50 or 60% down to almost a negligible figure. The *indications* have made a relative increase.

Among the indications we find: *Placenta previa, eclampsia, contracted and deformed pelves, malpositions, overdue cases which fail to go into labor.*

There are other indications but the length of this paper justifies discussion of only these.

*Placenta Previa:* I do not wish to be understood as stating that a diagnosis of placenta previa is unreservedly an indication for cesarean section. I believe that popularity of the cesarean operation in placenta previa is *increasing* because it is the safest kind of delivery for both mother and baby. It is difficult to lay general rules; but I believe all primipara who are diagnosed as previas a month before their date of expectancy should be kept near a good hospital where section can be done upon a few minutes notice. Most cases who are known previas prior to the eighth month are centralis cases and should be sectioned before they go into labor. Sometimes they have large hemorrhages at lightening time and have to be operated then. Any patient, primipara, or multipara, who can be diagnosed placenta previa a month prior to date of expectancy should be considered a centralis case and section done prior to onset of labor. I believe under ordinary conditions they should be carried within a few days of expectancy before operation, provided the hemorrhages are not dangerously profuse. When a patient has enjoyed a normal prenatal period with no hemorrhage until the onset of labor she can usually be considered a lateralis or marginalis case. If the bleeding is not too profuse most primipara and nearly all the multipara should be delivered thru the birth canal.

*Eclampsia:* In eclampsia or in pre-eclamptic toxemia in the elderly primipara, I believe the rule should be delivery by section, at least provocation of labor should not be done by intra-vaginal means, leaving section optional should conservative means fail. In any primipara with eclampsia where the labor is likely to be long and hard, section should be done before the patient endures a toilsome labor and becomes exhausted.

In multipara I believe eclampsia should be considered medical until proved other-

\*Read before The Oklahoma Clinical Society, November 5, 1931.



wise. The Stroganoff treatment or some of its modifications will safeguard most of these patients. One can never make clean cut classifications where the elements of danger are so great. Judgment in individual cases is indispensable. In any complication as great as eclampsia I feel that whatever course is selected we must admit that termination of the pregnancy at the proper time is the greatest step towards recovery of the patient. When medical means and management fails, we have the surgical to fall back upon.

*Contracted and Deformed Pelves:* Probably the most clean cut indications for cesarean section lie here. It seems to me that any patient who has a flat pelvis with a conjugate vera of  $7\frac{1}{2}$  cm. or less should not be given a test of labor. Not many seven pound babies will descend thru a pelvis which has a conjugate vera of less than 9 cm. Above 9 cm. for the conjugate vera provided the ischial spines are 8 cm. or over apart (as in funnel pelves), delivery from below is likely. The size of the baby and the structural make up of the patient come in for consideration.

*In Malpositions,* such as shoulder presentation, transverse, breech, etc., in elderly primipara, we believe section the delivery of choice before the patient goes into labor. In young primipara and in multipara version must be considered. Probably the decision between section and version may be reached only after the peculiarities in ability of the operator have been considered.

*Over Due Cases Which Fail to Go Into Labor:* Here is a condition in pregnancy which has dealt me much grief in the past. I see no objection to giving these patients castor oil and quinine. In my practice it starts labor in about 75% of the cases. I want to discuss the remaining 25%. Nearly every time I use mechanical means for starting labor such as Voorhees' bag, bougies, etc., inserted into the birth canal, I swear I shall never do it again. In my experience if castor oil and quinine do not produce labor these mechanical means will if given a day or two; but these labors are all long, drawn out, and hard. On account of these labors being so hard and so long on account of the poor quality of the pains, I have discarded the use of the bag and the bougie. These patients if in good condition should be allowed to go right on under close observation.

If they develop severe toxemia and medical means fail to provoke labor they should be sectioned. If on account of delayed labor there has developed a disproportion; the baby getting large; the fetal head fails to engage within a very few hours after the onset of labor, the mother should be sectioned.

Sometimes a diagnosis of dystocia can be made prior to onset of labor in these patients, this is a relative thing. Here the obstetrician must decide whether abdominal delivery offers better chances for both the mother and baby than delivery thru the birth canal. We are not looking about for a method of delivery in routine obstetrics better than nature provides. In complicated or pathologic cases where the mother's life is threatened, and where the baby might also be lost, we look upon cesarean section as a quick, safe, and scientific method of escape from dangerous conditions.

*Indications for the Various Types of Operation:* Here is a place where deliberate and mature judgment is timely. Sometimes the indication for section will also bespeak the type of operation to be used. So far as I am concerned it is a rare occasion when any more than three types of section need be considered. They are:

1. The low cervical.
2. The classical.
3. The Porro, with hysterectomy.

The low cervical within the past decade has largely replaced the classic as the routine operation. It is a good operation, and probably if any type of operation should be considered the routine, this is the one. However; I believe this operation has received more enthusiasm than it justly deserves. Like other new things it has enjoyed a wave of great popularity.

It is claimed by many that this operation is less shocking than others. This has not been my experience nor observation and I can see no reason for it. I believe however, that less damage is done to the uterus on account of the incision being in its lower segment rather than in its body. Also the peritoneal flap used here is of assistance in walling off infection. In young women where additional babies are expected, and probably to be delivered from below, this is the operation which should probably receive first consideration in the event that the patient's condition is such that she can likely endure an operation of over an hour. The amount

of time required for operation in heart cases, in eclampsia, and sometimes in a bleeding placenta previa bespeaks sufficient contra-indication for its discard.

In women nearing the menopause, or where tubes are to be sectioned to establish sterility, or where speed in operating is indicated, in clean cases the classic is the proper operation. I have had the pleasure of visiting Dr. Irving W. Potter of Buffalo and watching him work. He does the high classic section routinely, and his average time is 15 to 18 minutes to complete the job. In Dr. DeLee's work shop, I have seen many sections done; most of which were the low cervical and require one and one-half hours. For poor operative risks, in clean cases, the classic operation is far from obsolete.

The Porro type of section it seems to me will always live. There are several kinds of Porro operations. The one still in general use and the one to which I refer is merely hysterectomy at time of cesarean. In frankly infected patients where the cervix has been dilated for sometime; and in patients which have had repeated vaginal examinations, removal of the uterus often means the difference between life and death for the patient. Drainage is indicated here. Also in cancerous or fibroid growths the uterus may as well be removed at time of section.

#### LIPODYSTROPHY: REPORT OF SIX CASES IN CHILDREN

A. H. Parmelee, Oak Park, Ill., (Journal A.M.A. Feb. 13, 1932), states that lipodystrophy is defined by Coates as a "disease especially liable to affect children 5 to 8 years of age, in which characteristically there is a loss of subcutaneous fat of the face, neck, thorax, arms and abdomen, without assignable cause or gross symptoms of ill health. In association with this, there is in addition, in females, an increase of subcutaneous fat below the iliac crests." The outstanding features are the thin, almost cadaverous looking face and upper part of the trunk, while the lower part of the trunk and the legs look either normally or better than normally well nourished. Also, there is no loss of muscular power nor disturbance of sensation over the parts affected, and the individual is active and strong and well in every other respect. Although the face often appears pale, no anemia can be demonstrated. The onset is usually in young childhood. Absolutely no clue to the etiology of this strange disease is as yet at hand, though many writers have indulged in interesting speculations. The author goes in detail into the speculation as to etiology, because in six cases reported by him the onset seemed definitely to have followed some trauma to or infection of the nasopharynx, and in the reported cases there are thirteen in

which the onset dated from such conditions as measles, pertussis, influenza, pneumonia, tonsillitis, tonsillectomy and otitis media. In his cases, two followed tonsillectomy, one tonsillitis, one measles, pertussis and tonsillectomy. The close relationship of infections of the upper respiratory tract to encephalitis with its favorite localization in the midbrain brings strongly to mind the possibility, at least, that there may be some etiologic connection in this disease. None of the patients showed any laboratory or clinical evidence of disturbance of the endocrine glands. Emphasis is laid on the possibility that toxic or infectious derangement of central trophic centers in the thalamic and subthalamic areas of the midbrain may be the main etiologic factor.

#### CIRCULATION IN PYREXIA

H. C. Bazett, Philadelphia (Journal A. M. A., Oct. 31, 1931), points out that studies of the circulation in fever both in animals and man have been inadequate, and he expresses the hope that a more systematic study may be possible. For such studies the present methods of blood pressure measurements must be improved, and a greater capacity of analysis must be developed, since the respiratory methods of measuring circulation rate are unlikely to be adaptable to these cases. By improved technic in measuring blood pressure, by a study of the character of the pulse wave, by consideration of the complexities introduced by end and lateral pressure heads, and by careful standardization of any calculations through comparison with circulation rate measurements of the respiratory type, it may ultimately prove possible to unravel the complexities of the circulatory changes in such patients by the use of relatively simple technical methods.

#### XANTHOMATOSIS: (SCHULLER-CHRISTIAN'S DISEASE; LIPOID HISTIOCYTOSIS)

Merrill C. Sosman, Boston (Journal A.M.A., Jan. 9, 1932), discusses the cholesterol disease of Schuller-Christian, its manifestations, its natural course, and in particular the effect of roentgen treatment on the local deposits and on the signs and symptoms of systemic disturbance. To that end he reviews three cases that he has reported previously and brings them down to date, reviews and brings down to date one case reported by Christian in 1919, and reports two new cases. He summarizes his study by stating that xanthomatosis (lipoidosis, Schuller-Christian type) is due to a disturbance of lipid metabolism and is characterized by deposits of lipoids, chiefly cholesterol and its esters, in various organs and tissues in the body. The signs and symptoms depend on the location and extent of these deposits. Chief among them are defects in the bones, exophthalmos, diabetes insipidus, gingivitis, cessation of growth, and occasionally adipogenital dystrophy. Treatment has been ineffectual with exception of roentgen therapy to the areas of lipid deposit, which has uniformly resulted in prompt healing changes. The improvement has been most marked as regards the disappearance of the defects in the bones, least marked as regards the exophthalmos. The change in general or systemic signs and symptoms depends on the areas treated and not on the quantity or quality of the therapy given.



# PRACTICE WHAT YOU PREACH

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Physicians and dentists are called on when a community health program is inaugurated. They always respond with an offer of free service to the poor, or for those needing service who are unable to pay a full fee these professional men will accept any fee disinterested committees decide is fair. This service usually amounts to more than others give to the community program. These men are willing to do this because they appreciate more than others what improved health on the part of the people means to the community; because they know many now unable to support themselves or their families in continual ill-health will be able to do so if physical handicaps are removed. Community advantages of such activities are suggested in the following by Otis Durant of the Oklahoma A. and M. College, who has made a rural survey of family expenditures for health purposes: "What we should like to see in Oklahoma is a rapid increase in the amounts spent for health maintenance, until the needs for this purpose are amply cared for. . . This would mean increased ability to pay health expenses, and the health poverty cycle would start working in the opposite direction, that is, improved health, greater productivity, more wealth, and finally better health."

But good health and the removal of physical handicaps should reach all the people to be of most benefit. That means that the average self-supporting citizen should do that which is needed to put himself or his family in good health. That is, they should set an example of their belief in the value of good health.

We would like for the people to appreciate the seriousness and the potential dangers of apparent minor defects in childhood. Then parents would call on the family physician or dentist for guidance in avoiding hazards or for correction of defects that have already occurred. It

would mean sufficient increase in the professional man's income to permit him to give more of his time to others who cannot pay a full fee or none at all.

Below are given statistics on average physical condition of Oklahoma school children as found by my surveys. This covers thirty to forty towns from 500 to 8,000 population. These defects are found among the children of self-supporting parents as well as the others. Not just during the depression but before. In many instances the worst conditions are found in the families of the well-to-do. These are facts so often found that we know they are representative. It means the average citizen is not using his physician or dentist when needed.

We have tried to bring this to the attention of the people through our bulletin service. A bulletin, "Charity Should Begin at Home," has been sent to all newspapers and has been used by many. Wherever this has not been published we shall be glad to mail an extra copy on request. We think this will help to stimulate interest in the correction of defects by the average citizen. We believe fair minded people will appreciate the fact that professional men who give much of their time to community charity service have a right to expect the patronage of their fellow citizens who can pay. Folks should see the absurdity of giving attention to the other fellow's children when their own are in more need of attention. Above all, the economic value of investments in health should be appreciated by all.

Community and individual efforts should be made everywhere to improve this situation. Especially should the babies of today, and the future, be sanely fed and cared for to prevent so much disease and suffering.

The correction of these defects among those now or previously associated with

tuberculosis will do a great deal to prevent active disease. And, it will prevent other serious disease and bad health.

Among each hundred pupils we find:  
(Or this may be expressed in percent.)

	High School	Grade
Normal (no apparent defects)	15	15
Normal weight (Those with no defects included)	73	80
Underweight		
10 to 19 percent	16	16
20 percent or more	1	1
Overweight: 20% or more (A defect if above 20%)	10	3
Defective vision	10	10
Corrected vision	2	.3
Defective hearing	5	5
Defective heart	1	1
Pupils, defective teeth	35	55
Permanent	35	15
Corrected teeth	15	3
Diseased gums	10	13
One or more permanent teeth extracted	12	.5
Tonsils, enlarged only	11	22
Diseased	10	18
Removed	15	7.7
Incorrect posture	10	6

—o—

#### PARENTERAL USE OF LIVER EXTRACT IN PERNICIOUS ANEMIA

William P. Murphy, Boston (Journal A. M. A., March 26, 1932), treated thirty patients with pernicious anemia by means of liver extract administered parenterally. The extract may be administered easily and safely either with or without hospitalization of the patient and with the greatest assurance of success. Improvement in the blood is even more rapid and striking than that to be expected from the ingestion of much larger doses of liver or potent liver extract. Treatment was followed by an increase in the reticulocytes (young red blood cells) generally within a shorter period than occurs after treatment by mouth, and the numbers of the erythrocytes have increased promptly in practically all cases treated, even in those patients who were considered to be somewhat resistant to improvement to liver or extract given orally. There was a prompt and often very striking increase in the numbers of the white blood cells and blood platelets within a few hours of the beginning of treatment and a continuance of a normal or slightly elevated level during the course of treatment. Symptomatic improvement occurred after parenteral treatment, as is to be expected following the satisfactory oral use of liver or liver extract, although the improvement in general well being of the patient possibly occurred sooner after the onset of treatment than when oral treatment is used. Improvement in symptoms resulting from the spinal cord damage was striking in those patients whose treatment had been most satisfactorily carried out. The extract was administered to the series of patients without a reaction of importance. It may be advisable, as has been done in some of the patients with whom this report deals, to test all cases with one or more small preliminary injections in order to avoid the possibility of a severe reaction in the rare pa-

tient who may be hypersensitive to the liver. The most satisfactory use of parenteral treatment is the intramuscular injection of large or optimal amounts of the liver extract (extract prepared from 300 to 400 Gm. or more of liver) during the beginning of the treatment of a patient in relapse. Subsequent and maintenance treatment may perhaps best be carried out by similar smaller injections at intervals varying from five to seven days, or even much less frequently in the uncomplicated cases. The exact interval must be determined by the condition of the blood and of the patient. Although the injections may be given daily, such treatment will rarely be indicated, and it has been generally less well received by the patient than treatment at less frequent intervals. The rapid effect, together with the ease and safety of administration of the extract, especially intramuscularly, makes it an invaluable means of treating the critically ill patient and may well replace the use of either transfusion or stomach tube in the treatment of such a patient. The injection method of treatment should be a valuable substitute for the oral method in the patient who finds difficulty in the constant ingestion of a sufficient amount of liver material or whose gastro-intestinal tract is upset thereby, with resultant gas, discomfort or diarrhea. In the latter group the injections may be used permanently or for periods of a few weeks, alternately with liver or extract by mouth. In fact, such an alternation of methods may be desirable during the maintenance treatment of many patients who now find little or no difficulty with the oral regimen. Finally, mention is made of the economy possible through the use of parenteral extract as compared with the expense of either liver or liver extract administered orally.

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#### ABSENCE OF CERVICAL SPINE: KLIPPEL- FEIL SYNDROME

George I. Bauman, Cleveland (Journal A.M.A., Jan. 9, 1932), reports six cases, one male and five female, of the Klippel-Feil syndrome. This consists in a numerical variation in the cervical vertebrae with more or less complete fusion into one mass. The deformity remains stationary and is not affected by any treatment. It is disguised with difficulty and unfortunately does not become much less conspicuous as the patient develops. The mirror movement, when present, does become less noticeable but does not disappear. The deformity does not interfere with longevity. The classic symptoms, as given by Klippel and Feil, are (1) absence or shortening of the neck, (2) lowering of the hair line on the back of the neck and (3) limitation of motion. Other symptoms occurring in a certain percentage of cases are: torticollis, mirror movement, facial asymmetry, dorsal scoliosis, other deformities, difficulty in breathing or swallowing, and shortness of breath. No treatment is of any benefit. Operations, as for congenital torticollis, or active treatment, as for Pott's disease, should be avoided by making a correct diagnosis.



# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### OVERPRODUCTION OF NURSES AND PLIGHT OF CERTAIN PATIENTS

If a recent survey, by the American Nurses' Association, is even approximately correct the situation of the nurse, as well as certain types of patients is becoming very serious. As usual the world wide depression has a great deal to do with it; for doctors have already noticed that their work is greatly falling off, not because their services are not desired but because people must simply economize. The Nurses' Association states: "Training schools must curtail the steady production of more nurses, or the morale of the nursing profession will break down complete-

ly." This is the opinion of the Committee on the Grading of Nursing Schools, following an analysis of early returns of the 1930 census on workers.

The seriousness of the situation may be appreciated as revealed by the tabulation of figures for eighteen states and the District of Columbia. Statistics since the 1920 census show an increase in population of 7 per cent, while the total number of trained nurses has increased 78 per cent. In some localities and areas of the country groups of patients are not properly nursed, owing to the poor distribution and lack of special training of the nurses in those areas. Figures show that in forty-two cities the average nurse has no more than 149 days of employment in any given year. In Bangor, Maine, she has not more than 77 days of work, and in Ottumwa, Iowa, where employment conditions are best among the cities studied, she can work not more than 201 days in the year. Rates for other cities range between these two.

In New Hampshire the nurse can expect no more than 190 days work in the year, while in Maine, Vermont, Iowa, North and South Dakotas, Kansas, Delaware, Montana, Wyoming, Arizona, Nevada, Idaho and the District of Columbia, there is not nearly enough nursing to be divided between the trained and untrained nurses competing for patients. Untrained nurses are not on the increase, but trained nurses are being turned out to terrific competition by the thousands each year. For instance, Maine in 1900 had one trained nurse for every 5,068 persons; in 1910 there was one for every 910; in 1920, one for every 579, and in 1930 one for every 349.

Dr. May Ayres Burgess, presenting these figures in the American Journal of Nursing, for March, states that "If nursing is to avoid disaster, the steady production of more students, who become graduates, must cease. It must cease not only in the small schools, but in most of the large schools as well. Graduate nurses must be employed. If they are unemployable, they must be re-educated. The schools of nursing have produced them. They are members of the profession. Unless their morale is to break down completely, they must either be eliminated or utilized."

For many years the writer has noted that probably too many nurses, often poorly and indifferently trained, have been turned out of, not only the small hospital,

but the large hospital as well. Some of these develop by special work, further training and study, into splendid nurses, and of course others are merely 'nurses'.

Neither the people nor the medical profession can do without fine nursing service and it is up to the economists in both the medical and nursing profession to see that the situation does not get further out of bounds. Miss Mary M. Roberts, R. N., editor of the American Journal of Nursing, has this suggestion to offer which all nurses, physicians and hospitals should consider: "Even with the over production of nurses, there still exists the unnursed patient. Many persons are chronically sick at home; among these are persons suffering from arthritis. New and scientific knowledge on the care of arthritis brings new opportunities in nursing. The field of psychiatric nursing, too, is hardly touched. Patients with heart disease and tuberculosis require special nursing care. Some of the unemployed nurses can well take up special training that will fit them for these types of service."

A preliminary report of survey of hospitals for nervous and mental patients in the United States made under the auspices of the American Medical Association sent questionnaires to 561 institutions, 416 of which replied. Personal visits were made to 343 of the institutions. It is noted that of the government-owned group, the Veterans' Administration hospitals are on the whole comparatively new and well equipped, have relatively large medical staffs, and apparently give the individual patient good custodial and therapeutic care; while among county and city institutions the great majority of those visited were found to be custodial in nature without any aspirations to the rank of hospitals. In state hospitals, which are nearly three times as numerous as all federal, county and city institutions, personal contact revealed that overcrowding was universal. We well know this to be the situation in Oklahoma and it has been the situation since Statehood; notwithstanding the rapid building of new houses since then the hospitals are constantly overcrowded. Of course this cannot be helped but it seems that the services of some of the great body of only part time employed nurses might be utilized to the advantage of the State as well as the patient in such institutions.

## "THE OPEN SEASON FOR 'DEARS' AND SCIENTIFIC EXPERIMENTATION."

*The New York Sun*, December 2, 1931, comments in an unusual manner upon deaths attributed to foot-ball. Three Fordham players engaged with Bucknell, November 21, were injured, one of the three dying, another suffered from hemiplegia, while the third was seriously injured. A West Point cadet died from a broken neck, October 24th, at Yale. Altogether 29 deaths are directly attributed to the game during the 1931 season. *The Sun* rather facetiously points out that there is a very short open season on deers, but none on "dears," that man-baiting, bull fights, and cock-fighting are taboo in "civilized" countries. In this connection why not bring in the question ever present and irritating, of the constant "physician-baiting," when our numerous busy body, pernicious and interfering "societies" for the "prevention of this" and "protection of mice, guinea-pigs, cats and dogs," are ever on the alert to prevent the useful sacrifice of these useless animals in furthering the attempts to prevent the loss of human life, and advance and prolong human life. It would be a most useful diversion of otherwise useless activity on the part of these misguided fanatics, if they would direct their energies toward the prevention of vicious man-killing *via* the foot-ball, rather than finding them at the business of constantly interfering with, and misrepresenting high type scientific work in research laboratories, all of which has for its object alleviation of human suffering, and the saving of human life. All of which reminds us of the trite saying of *Puck*: "What fools we mortals be."

## THE PREVENTION OF EYE ACCIDENTS

The machine age has enormously increased the great number of accidents to workmen, regardless of every effort to protect them. The National Society for the Prevention of Blindness states that while most industrial eye accidents are preventable, American industry every year permits the loss of one or both eyes by more than 2,000 workmen, while 300,000 minor eye injuries occur, running the annual waste in lost time, compensation payments and medical bills to approximately \$50,-



000,000. It is difficult to estimate the cash value of the time lost on this account, but one authority places it at \$18,000,000, while more than \$26,250,000 is expended as the result of the injuries.

It is suggested that a mandatory rule be enforced in every industrial shop which will require the employee to wear goggles while at work. Mr. Harry Guilbert, Director of Safety for the Pullman Company, Chicago, states that the company enjoys the remarkable distinction of not having a single eye loss in the last six years among the thousands of men daily engaged in dangerous work in the Pullman shops, and in other places. In this great company, despite every effort to prevent injuries, no headway was made until the president issued a mandatory rule that every employee irrespective of his occupation, must wear goggles while on duty, and visitors while passing through the plant must do likewise. This order brought the remarkable results achieved but it became necessary to discharge many men because they ignored the rule. After a time all workers complied with the rule.

This seems much better than to have men suffering from either total or partial loss of vision and other eye injuries, without considering the financial phase of the question whatever.

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### *Editorial Notes—Personal and General*

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DR. T. J. DODSON, formerly of Norman, announces his removal to Foss, Oklahoma.

DR. RAYMOND H. FOX, addressed the Rotary Club at Altus March 1st, his subject being the "Development of Surgery."

DR. FRANCIS T. WILLIAMS, Muskogee, Genito-Urologist, U. S. Veterans Hospital, has been transferred to the Bronx Hospital, New York City.

DR. W. E. FLOYD, has sold his interest in the Holdenville hospital to Mr. Harry H. Diamond. Dr. Floyd will continue to be connected with the hospital.

DR. F. E. SADLER, Norman has been appointed Superintendent of the Soldiers' Relief Hospital at Sulphur. Dr. J. M. Hancock, Chandler, has been named assistant surgeon.

DR. E. LEVY, for more than six years tuberculosis expert at the U. S. Veterans Hospital, Muskogee, and for several years Chief of the Medical Service has been transferred to the Bronx Hospital, New York.

OKMULGEE-OKFUSKEE COUNTY MEDICAL SOCIETIES met at Okmulgee, March 14th. The program was presented by Doctors Lea A. Riely, E. S. Ferguson, L. J. Moorman and John Heatley, Oklahoma City.

AMERICAN PROCTOLOGIC SOCIETY will meet in Memphis, Friday and Saturday, May 6 and 7. Headquarters at the Hotel Peabody. The arrangements committee are Doctors John L. Jelks, Memphis, and Victor K. Allen, Tulsa. An extension program is offered for the two days and the date, which is just prior to the A. M. A. meeting at New Orleans, should accommodate many physicians who propose to attend the New Orleans meeting.

THE EXTENSION DEPARTMENT of the State University and the State Medical Association presented the following program at McAlester, March 21; Tulsa, March 22; Muskogee, March 23; McAlester, March 24; and Shawnee, March 26. The subjects were: "Important Points in Thyroid Disease" by Dr. Robert S. Dinsmore; "Interpretation of Genito-Urinary Symptoms" by Dr. Wm. E. Lower; "Roentgenology of Urinary Tract," by Dr. Bernard H. Nichols. The evening program on "Malignancies of Head and Neck," by Dr. Dinsmore; "The Acute Abdomen" by Dr. Lower; "Roentgenology of Gastro-Intestinal Tract" by Dr. Nichols.

MUSKOGEE COUNTY MEDICAL SOCIETY met March 14th. Dr. E. H. Coachman presented "Hodgkins Disease," discussion opened by Dr. H. T. Ballantine; Dr. J. S. Campbell, on "Cisternal Puncture," discussion opened by Dr. C. V. Rice; Dr. C. W. Heitzman presented "The Cornerstone of Civilization," discussion general.

The March 28th meeting had for its program, Dr. F. B. Fite, on "The Early Day Surgery in Territorial Days"; Dr. J. L. Blakemore on "The Obstacles Met and Overcome by the General Practitioner in Organized Medicine Before Statehood"; Dr. Floyd E. Watterfield, on "Early Day Practice"; Dr. C. A. Thompson on "Organized Medicine, Its Outlook, and Prospects At This Time and Since Statehood."

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met at Duncan, March 8th, with the following program:

President's Address—D. Long, M.D., Duncan.

The Relation of Public Health to the Medical Profession—G. N. Bilby, M.D., State Health Commissioner, Oklahoma City.

Iritis—U. C. Boon, M.D., Chickasha. Discussion opened by G. S. Barger, M.D., Purcell.

Surgery as an Aid in the Treatment of Advanced Pulmonary Tuberculosis—Horace Reed, M.D., Oklahoma City. Discussion opened by W. H. Livermore, M.D., Chickasha.

Luncheon—At the Wade Hotel. Fifty cents. All you can eat.

Diseases of the Gall Bladder—Lea A. Riely, M.D., Oklahoma City. Discussion opened by J. E. Heatley, M.D., Oklahoma City, who also demonstrated X-ray pictures of the Gall Bladder.

Toxemia of Pregnancy—E. P. Allen, M.D., Oklahoma City. Also DeLee's moving pictures of Eclampsia. Discussion opened by W. S. Ivy, M.D., Duncan.

ALVA announces that its \$50,000 Municipal Hospital will be completed about the middle of April.

CANADIAN COUNTY MEDICAL SOCIETY entertained their wives as honor guests, March 18th. Among the visitors were Dr. and Mrs. J. A. Hatchett, former residents of El Reno.

WOODS COUNTY MEDICAL SOCIETY met at Waynoka, March 29th. The program was as follows: "Goiter" by Dr. R. M. Howard, Oklahoma City; "The Newest Things in Allergy" by Dr. Ray M. Balyeat, Oklahoma City; a paper, subject unannounced, by Dr. H. E. Huston, Cherokee.

#### DOCTOR ARTHUR LEMUEL STOCKS

Dr. Arthur Lemuel Stocks, age 59, died March 26, 1932, at his home in Muskogee, from an anginal attack. He was born in Oughtibridge, England, April 6, 1872, and came to America when sixteen years of age. First he went to Lincoln, Nebraska, and there took a premedical course, and afterwards attended the University of Illinois, from which he graduated in 1897. He practiced in Quincy, Illinois until 1905, and then moved to Monmouth, Illinois, where he resided until 1911. In that year he came to Muskogee, Oklahoma, and engaged in general practice until 1915, at which time he returned to the University of Chicago for a post-graduate course in Radiology and Dermatology, which specialty he continued until his death.

He was married in 1895, to Miss Ora Meek, Superior, Nebraska, who, together with two daughters, Miss Jane Stocks of Muskogee, and Mrs. William Hays of Avoca, Iowa, survive him.

Dr. Stocks was a member of the Knights of Pythias; a Shriner and a Master Mason. For fifteen years he was secretary of the Muskogee County Medical Society, where his untiring energy and efforts went far to build up the organization.

He was later elected President of the Muskogee County Medical Society and held this office until he retired from active practice on December 3, 1930. Thereafter he served as President Emeritus.

Dr. Stocks lived a very active and useful life among the members of his profession, always striving to keep abreast of the latest developments in his specialty, and in touch with the whole field of medicine.

During his residence in Oklahoma he was prominent in the medical meetings of both State and County and his conceptions of the men in the profession was marked by a great sense of respect. This he strove to make each physician feel, as well as his responsibility and position in life.

Twice he returned to England, once alone and again with his family last summer. There he visited the scenes of his youth and on his return gathered much

mirth from recalling these incidents. America suited him better than his native Britain, for he was a man of democratic convictions and better fitted unto the customs of this country than those of staid England.

Dr. Stocks practiced his belief in gathering happiness wherever he found it along life's pathway, and up until the last evening of his life he participated in all possible social and professional gatherings.

We feel that we have lost a true friend and an able counselor and his presence and advice in all things medical will be sadly missed.

For ourselves and our associates we extend to you our profound sympathy and condolences in the loss of a devoted, kind and indulgent father.

E. H. COACHMAN,  
C. E. DeGROOT,  
C. E. WHITE,

Committee, Muskogee County Medical Society.

#### DOCTOR WILBER ELMER RAMMEL

Doctor Wilber E. Rammel, 70 year old resident of Bartlesville, since 1907, died at his home March 14th following a long illness.

He was born January 24, 1862, in Indiana, where he received his preliminary education. He graduated from the Cincinnati Medical School in 1896. He was married in 1888 at Coffeyville, Kansas. He moved to Denver, where he practiced medicine nearly twelve years after which time he moved to Bartlesville.

Dr. Rammel was a member of the medical society and other organizations connected with his profession, and a member of all the Masonic bodies.

#### DOCTOR JAMES BENONO BECKETT

Doctor J. B. Beckett, pioneer physician of Spiro, died Thursday, March 10, after a long illness.

Dr. Beckett was born in October, 1861. He had practiced in Spiro since prior to Statehood.

He is survived by his wife, Mrs. Jo. Maroney Beckett and six children, also his mother.

Funeral services were conducted at the local Methodist Church, March 11, with burial in Spiro Cemetery.



# CONDENSED PROGRAM

## FORTIETH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, OKLAHOMA,

MAY 24, 25, 26, 1932.

*Meeting Place*—All meetings will be held in the Hotel Mayo, Telephone, 3-2141 (local) ; L. D. 100.

*Registration*—Sixteenth Floor, Hotel Mayo. All physicians except those from outside the State and visiting guests, must hold membership certificates for 1932 before registering. It is urgently requested that you see your County Secretary if you are not in good standing and become so before this meeting.

Woman's Auxiliary will register on the Mezzanine floor, Hotel Mayo.

*Dermatology and Radiology Society*—Will hold clinics during the morning of May 24th, 9:00 A. M., Crystal Ball Room. Papers and the regular program will be heard in the afternoon, in the small meeting room, Mezzanine floor.

*Oklahoma Pediatric Society*—Will hold clinics during the morning of May 24th, 9:00 A. M., Morningside Hospital. Its regular program of papers and discussion will be held in the afternoon, in the Junior Ball Room, Mezzanine floor.

*Council*—Will meet at 4:00 P. M., Tuesday, May 24th, Hotel Mayo, and thereafter upon the call of the President. It is the function of the Council to originate and consider all business affairs of the Association. All such matters should be presented to the Council before going to the House of Delegates.

*House of Delegates*—Will meet in the Crystal Ball Room at 7:30 P. M., Tuesday, May 24th, for the transaction of such business as is necessary. House of Delegates also meet at 8:00 A. M., Wednesday, May 25th. This meeting will be held in the large meeting room on the Mezzanine floor. The first order of business will be the election of officers, after which unfinished business will be disposed of.

*Delegates*—Prior to the meeting Delegates will submit their credentials to the Credentials Committee, small meeting room, sixteenth floor, Hotel Mayo.

*General Scientific Sections*—Will meet May 25th, 8:30 A. M., Crystal Ball Room,

sixteenth floor. (All papers and addresses limited to forty-five minutes).

### WEDNESDAY, MAY 25TH

#### (Morning)

- 8:30 *Clinics*, Tulsa County Medical Society, Crystal Ball Room.
- 9:30 Dr. Frank C. Neff, Kansas City, "*Active Immunization Against Diphtheria.*"
- 10:15 *Address*—Major General Hugh Cumming, U. S. Public Health Service, Washington, D. C.
- 11:00 *Section on General Surgery*, Crystal Ball Room.
- 11:00 *Section on General Medicine*, Junior Ball Room.

#### (Afternoon)

- 1:30 *Section on General Medicine*, Junior Ball Room.
- Section on General Surgery*, Crystal Ball Room, sixteenth floor.
- Section on Eye, Ear, Nose and Throat*, small meeting room, sixteenth floor.

#### (Evening)

- 8:00 *President's Address*—Dr. R. M. Anderson, Shawnee, Junior Ball Room.
- 9:00 *Reception and Dance*, Crystal Ball Room.

### THURSDAY, MAY 26TH

#### (Morning)

- 8:30 *Clinics*, Tulsa County Medical Society, Crystal Ball Room.
- 9:30 *Address*—Dr. Arthur E. Hertzler, Halstead, Kansas.
- 10:15 Lieut-Colonel Sanford W. French, Station Hospital, Ft. Sam Houston, Texas.
- 11:00 *Section on General Surgery*, Crystal Ball Room.
- 11:00 *Section on General Medicine*, Junior Ball Room.

## (Afternoon)

- 1:30 *Section on General Medicine*, Junior Ball Room, Mezzanine floor.  
*Section on General Surgery*, Crystal Ball Room, sixteenth floor.  
*Section on Eye, Ear, Nose and Throat*, small meeting room.

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WOMAN'S AUXILIARY

*General Headquarters*—Hotel Mayo.

*Registration*—Mezzanine floor, Hotel Mayo.

*Alfresco Party*—At "Ledgerton" the suburban home of Dr. and Mrs. Fred Y. Cronk, Tuesday evening, May 24th, 6:00 P. M.

*Business Meeting of Woman's Auxiliary* Wednesday, May 25th, 10:00 A. M., Hotel Mayo.

*Musical Tea*—At "Clinton Ingleside" the home of Mrs. Fred S. Clinton, Wednesday, May 25th, 3 to 5 P. M.

*Luncheon*—Tulsa Club, Thursday, May 26th, 12:30 P. M.

*Tea*—For the retiring and newly elected officers, Mrs. Charles J. Wood, hostess, University Club, Thursday, May 26th, 3 to 5 P. M.

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SECTION CHAIRMEN AND SECRETARIES

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SURGICAL SECTION

Chairman, Fred S. Watson, M.D., 401 Commerce Bldg., Okmulgee, Oklahoma.

Secretary, W. G. Husband, M.D., Hollis, Oklahoma.

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EYE, EAR, NOSE AND THROAT

Chairman, A. L. Guthrie, M.D., Medical Arts Bldg., Oklahoma City, Okla.

Secretary, J. F. Gorrell, M.D., Medical Arts Bldg., Tulsa, Okla.

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GENERAL MEDICINE

Chairman, Henry H. Turner, M.D., Osler Bldg., Oklahoma City, Okla.

Secretary, Fred G. Dorwart, M.D., Barnes Bldg., Muskogee, Oklahoma.

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DERMATOLOGY AND RADIOLOGY

Chairman, Chas. J. Wood, M.D., Medical Arts Bldg., Tulsa, Oklahoma.

Secretary, Carl L. Brundage, M.D., Medical Arts Bldg., Oklahoma City, Okla.

## PEDIATRICS

Chairman, C. E. Bradley, M.D., Medical Arts Bldg., Tulsa, Oklahoma.

Secretary, Geo. H. Garrison, M.D., 1200 North Walker, Oklahoma City, Okla.

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TULSA COUNTY COMMITTEES

Doctor W. J. Trainor, Tulsa, Chairman of the Committee on Arrangements on behalf of the Tulsa County Society, announces the following Committees to handle the work of the annual meeting, at Tulsa, May 24, 25, 26, 1932:

*General Chairman.* W. J. Trainor, 1011 Medical Arts Bldg., Tulsa, Okla.

*Registrations.* C. C. Hoke, Petroleum Building, Tulsa.

*Finance.* W. Albert Cook, 1107 Medical Arts Bldg., Tulsa.

*Entertainment.* W. A. Showman, 409 Medical Arts Bldg., Tulsa.

*Hotels.* James Stevenson, 615 Medical Arts Bldg., Tulsa.

*Golf.* Charles J. Wood, 511 Medical Arts Bldg., Tulsa.

*Ladies' Entertainment.* Women's Auxiliary of The Tulsa County Medical Society, Tulsa.

*Reserve Officers.* Paul R. Brown, 517 Medical Arts Bldg., Tulsa.

*Scientific Exhibit.* Morris B. Lhevine, 1007 Medical Arts Bldg., Tulsa.

*Fraternal Dinner.* Ralph A. McGill, 1010 Medical Arts Bldg., Tulsa.

*Badges.* J. C. Brodgen, Mayo Bldg., Tulsa.

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NEURITIS AND MULTIPLE NEURITIS FOLLOWING SERUM THERAPY

George Wilson and Samuel B. Hadden, Philadelphia (Journal A.M.A., Jan. 9, 1932), present the case histories of six patients with neuritis following the use of tetanus antitoxin. In reporting these cases and in emphasizing their serious complications, they are fearful lest consideration of these facts deter physicians from the use of antiserums in indicated cases. That is far from their purpose; they do wish to suggest, however, that more careful testing for horse serum sensitization be employed and that desensitization be resorted to when indicated. In this day and generation, when the free administration of diphtheria toxin antitoxin mixture is employed, it is well to bear in mind that this is sufficient to render a patient sensitive to horse serum. They also wish to call attention to the remark of Braunlich, who reports that serum sickness occurs much more frequently and is more severe following the use of fresh serum than when older serum is employed.



# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## TUBERCULOSIS

Edited By

L. J. Moorman, M.D.  
304 Osler Bldg., Oklahoma City

**TUBERCULOSIS BX HEAD**  
**Fibrin Bodies in Pneumothorax Cavities: Report of Case.** C. H. Heacock and E. B. VanNess.  
*Southern Medical Journal*, February, 1932.

Fibrin bodies are occasionally associated with pneumothorax but are of no pathological significance. The two main theories advanced as to their origin are (1) that they are dependent upon hemorrhage or trauma for their origin; (2) that they are purely fibrin deposits and not dependent upon injury. The case here reported seems to bear out the latter theory since it is the only one observed in a patient not having previously received artificial pneumothorax for pulmonary tuberculosis. In practically every other case a serous or hemorrhagic exudate has preceded or been noted at the time of discovery of the fibrin body. The case described here differs from all those previously reported in that it occurred following spontaneous pneumothorax in a patient who showed no signs of tuberculosis. Further, in this case, there was nothing to suggest trauma or hemorrhage as a causative factor. The presence of a pleural exudate previous to the formation of the fibrin body and the absence of injury is very strong, if not conclusive evidence that these bodies are merely large accumulations of fibrin deposited upon a nucleus.

**The Prognosis in Tuberculosis with Especial Reference to the Psychological Aspects.** E. W. Hayes, M.D., F.A.C.P. *Annals of Internal Medicine*, Vol. 4, No. 9, March, 1931, Pages 1183-1187.

Prognosis in tuberculosis is an individual affair and more dependent upon the mental reaction of the patient to the treatment than upon his feelings, appearance or even upon the extent of his disease. A month or more of careful study and observation of a case is necessary in order to form an opinion of the prognosis of any case thru the proper evaluation of the important symptoms and physical signs. Prognosis is always uncertain depending as it does not only upon age, sex, habits and opportunity to take the cure but also upon the virulency of the infection, the resistance of the patient to the infection and the way in which he adjusts himself and reacts to the cure.

Since tuberculosis is cured by cheerful and rigid regularity in carrying out the details of the treatment, it can be seen that the major proportion of the influences determining the prognosis are psychological and have to do with the emotional, mental and nervous reactions of the patient. Thus it is that so much depends upon the physician in influencing the patient to abide by the mode of life most apt to lead him back

to health. In order to treat these patients successfully they must be studied, understood and supervised by the physician so that he may control them mentally and emotionally. The average patient cannot be expected to follow the cure properly on the simple advice to "take things easy"; he must be given detailed directions and constant guidance. Since the nature of the disease is such that its poisons seem to affect the centers of nervous and mental control, these patients are not only physically but are also mentally and nervously sick. This fact makes it much harder for them to carry out the cure in any environment except one where they are thoroughly understood and given proper sympathy and guidance. One of the first and most necessary steps from a psychological standpoint is to explain truthfully to the patient the extent of his disease as well as the nature of the cure as unless he understands his condition and what he must do to recover he cannot follow the cure as he should. Most patients find the truth easier to face than uncertainties and a simple, frank explanation of the facts does much to form the bond of sympathy between the patient and physician.

While tuberculosis is one of the most curable of chronic diseases its prognosis in the average active case is, at any given time, uncertain and dependent on many different factors. The most important of these in most cases, is the psychology of the patient which in turn depends upon the physician. Therefore the ability of the physician to properly advise, intelligently guide and efficiently manage the patient is the outstanding influence in bringing about recovery from pulmonary tuberculosis.

**A Comparative Study of the Pirquet and Mantoux Tests in School Children.** S. A. Slater and Kathleen Jordan.

Previous to 1914, the Pirquet test was generally used and considered practical and satisfactory. Since that time, however, many have considered it unreliable and have used the more sensitive intracutaneous or Mantoux test. While some have gone so far as to say that the Pirquet must be discarded as inaccurate, this study does not bear out that theory. It has also been shown by a number of investigators that, regardless of the test used, the incidence of infection is not as high as has been generally thought. Since the percentage of reactors is as small as it generally is, it would not be impossible to make a study of the home contacts and thus discover not only many early cases both childhood and adult, but also determine the source of infection—frequently an unsuspected close associate.

The purpose of this study was to determine which test would be the more practical in the fight against tuberculosis rather than which would give the higher percentage of reactors. The study was conducted in a wealthy rural community with good living conditions, intelligent and cooperative people and a tuberculosis death rate

of less than 25 per 100,000 for the past five years. Schools from the largest town, the smaller towns and a few strictly rural districts were selected so as to give the best possible representation of the district. The majority of the pupils took the test and positive reactors were X-rayed and received physical examinations. This examination, however, revealed so little of importance that it was not recorded: the history, also, was considered of little value since some denied existing tuberculosis while others reported it when it was not present. Personal acquaintance with the family gave information of value.

Both tests were given at the same time, one on each forearm and were read 48 hours later. Only one reading was made in order to keep the study as practical as possible. Of the 1006 white children tested in this manner 134 or 13.3 percent reacted to one or both tests; 42 or 4.2 percent reacted to the Mantoux alone; 63 or 6.3 percent reacted to both while 29 or 2.88 percent reacted to the Pirquet alone; 105 or 10.4 percent reacted to the Mantoux; 92 or 9.15 percent to the Pirquet. The biggest and most interesting difference was shown in the ages of those reacting to the two tests; the average age of those reacting to the Mantoux alone being 14, while that of all those reacting to the Mantoux was 13.1. The average age of those reacting to the Pirquet alone was 10.6 while that of all reacting to it was 12 years. This is thought to be because the Mantoux, being more sensitive, gives a reaction when the child is older and has had more opportunity for casual contact outside the home, or has only a slight infection, or he may have overcome an old infection to the extent of not reacting to the less sensitive test while those reacting to the Pirquet possibly had become infected at home or had been more recently infected. Another explanation is that the skin of the younger child is more tender and more apt to react than the thicker skin of the older child. It would seem that the Pirquet is preferable in the younger child, the Mantoux in the older. The Pirquet is preferable in that it is simpler and easier to give; also the undiluted tuberculin will retain its potency indefinitely while the diluted form used in the Mantoux must be fresh. If it is true that the Pirquet is most apt to discover the child infected in the home it is thus of more practical aid in finding the source of infection. If this can be done and the source removed the child has a much better chance than would otherwise be possible.

On X-ray examination of the reactors, 15 were found with demonstrable lesions, 2 of whom reacted only to the Mantoux; 12 to both and 1 to the Pirquet alone. The percentage of positives was higher among the girls due no doubt to their closer association with those in the home. More boys than girls reacted to the Mantoux thus indicating an infection outside the home. A small number of families were studied and the results indicated that when a child has had a family exposure either test will most likely give a reaction.

Since the percentage reacting is so small it would seem worth while to use the test more widely in the schools and since the Pirquet gives a positive test in most cases of home exposure this test would seem the more practical in determining the source of infection because it would reduce the number of families to be studied. Further study will no doubt yield much information of practical benefit.

**Intrapleural Pressure Changes During Phrenicectomy in Patients with Artificial Pneumothorax.** Cameron Haight and John Kenneth Deegan. *The American Review of Tuberculosis*. February, 1932.

Since one of the usual effects of a phrenicectomy is the reduction of the hemithorax thru a rise of the level of the paralyzed diaphragm, it seemed important to determine whether, in cases of pneumothorax subjected to phrenicectomy, the operation would bring about a change in the intrapleural pressure. Since if a volume of gas is compressed, the pressure exerted by this gas is increased, it would seem that a rise of the diaphragm, by reducing the volume of air within the intrapleural space, should raise the intrapleural pressure. In man, however, the structures being flexible, it had to be determined how the intrapleural pressure might be influenced by this flexibility.

Observations of the intrapleural pressure changes occurring during phrenicectomy are reported in 7 patients with pulmonary tuberculosis and artificial pneumothorax. An increase in the mean intrapleural pressure followed cutting the phrenic nerve in 6 of the 7 cases. The average increase in the mean pressure was 2.4 cm. of water. No change in the mean pressure occurred in one patient with pneumothorax complicated by pleural effusion. Thus it would seem that factors such as a previous displacement of the mediastinum, a freely movable mediastinum, herniation of the mediastinum, and a portion of collapsible lung did not prevent an increase in intrapleural pressure. Pleural effusion, however, may possibly be a factor in preventing such a rise during phrenicectomy.

**Recurrent Winter Cough.** Joseph Harkavy. *The American Review of Tuberculosis*. February, 1932.

Studies of respiratory infections following influenza in 13 cases point to a frequent simultaneous involvement of the sinuses and lower respiratory tract. The lesions in the lungs are characterized by bronchitis, unresolved pneumonia and bronchiectasis. Delayed resolution of pneumonic infiltrations is partly dependent upon the persistence of the chronic infection in the sinuses and adenoids. Disappearance of pulmonary signs and clinical symptoms followed nonsurgical treatment of the sinuses in most cases but not in those having bronchiectasis. The prognosis depends upon early detection and treatment of foci of infection in the upper respiratory tract in order to prevent chronic progressive changes characterized by hyperplastic sinusitis, pulmonary fibrosis and bronchiectasis. Treatment at late stage is difficult and unsatisfactory but changes of climate to warm, dry localities tend to decrease recurrences. When an allergic component exists in the form of protein hypersensitiveness, it must be eliminated before complete therapeutic results can be obtained.

**A Study of Tuberculosis Infection by Way of the Female Genital Tract.** Edwin M. Jameson. *The American Review of Tuberculosis*. February, 1932.

Small cotton pledgets containing a known amount of a suspension of R I tubercle bacilli were inserted into the vaginas of 12 healthy, virginal guinea pigs and allowed to remain 4 to 8 days. Ten of the animals thus treated showed



a positive intracutaneous tuberculin test at the end of 87 days. Tuberculous lesions were found in the lymph nodes of 6 animals when autopsied at the end of 100 days and one of them showed tubercles in the genital organs. There was no difference in the number of "takes" secured in animals inoculated during the oestrus or during the resting period. Many of the animals showed changes in the endometrium and ovaries which may be attributed to the tuberculous infection. Ascending tuberculous infection by way of the female genital tract was produced in 11 of 12 animals inoculated per vaginam although tuberculous lesions were found in only 50 per cent. It would thus appear from these experiments, in spite of the small series of animals used, that tuberculous infection by way of the healthy female genital tract is not difficult to effect, even though tuberculous lesions of the genitalia can seldom be demonstrated.

**Spontaneous Pneumothorax on the Left Side with Simultaneous Pneumonia on the Right.** Edward Tolstoj and Doreen R. Corke. *The American Review of Tuberculosis*, February, 1932.

A case is reported of a nontuberculous spontaneous pneumothorax on one side of the chest and a type I pneumococcus pneumonia on the other side. In spite of the extent of lung tissue involved, the patient suffered little discomfort and only moderate dyspnoea and cyanosis of 48 hours duration. The pneumonia cleared rapidly and the collapsed lung continued to expand until it reached a normal state, thus effecting a complete recovery from both conditions.

**A Study of the Laryngeal Effects of Collapse Therapy in Laryngopulmonary Tuberculosis.** Alexander T. Cooper and Otis O. Benson. *The American Review of Tuberculosis*, February, 1932.

Tuberculous laryngitis is usually secondary to tuberculosis elsewhere in the body, usually in the lungs. The prognosis of this complication is grave because it supervenes in the more advanced stages of the disease. The institution of a satisfactory collapse of the diseased lung in laryngopulmonary tuberculosis will not only benefit the pulmonary lesions but the laryngitis tends to improve and quite frequently the lesions in the larynx can be used as a reliable index to the progression of the disease elsewhere.

Of the 106 cases of laryngopulmonary tuberculosis studied over a period of 6 months to 6 years at the Fitzsimmons General Hospital, Denver, Colorado, 80 or 75.4 percent had far advanced pulmonary tuberculosis. Of these 106 cases 43 or 40.6 percent showed demonstrable improvement in the larynx while 63 or 59.4 percent showed no such improvement. It appeared that improvement in the pulmonary lesions depended closely upon the degree to which the collapse was satisfactory and that laryngeal improvement paralleled pulmonary improvement. Practically every patient in this series was treated by collapse therapy, either thoracoplasty, phrenic exairesis or pneumothorax, because of cavitation or progressive pulmonary tuberculosis. Laryngeal improvement occurred in a greater number of patients than showed either a satisfactory collapse or demonstrable improvement in the chest since 43 percent showed laryngeal improvement and only 33.9 percent chest improvement. This may have been due

to a lessening of cough and expectoration with its resultant diminution in trauma of the larynx even in a collapse not considered satisfactory. Seventy-one percent with satisfactory collapse showed clearing of the laryngeal lesions while only 28 percent of those with unsatisfactory collapse showed such improvement. The ulcerative type of laryngitis more frequently encountered in far-advanced cases proved most difficult to treat with fewer patients improving; of the 78 cases of non-ulcerative laryngitis 34 or 43.6 percent improved while only 9 or 32.1 percent of the 28 ulcerative cases showed improvement. Twenty-four of the 96 cases studied had tuberculous enterocolitis in addition to their laryngopulmonary disease; all of these patients but one showed improvement in intestinal symptoms as their laryngeal and pulmonary lesions cleared up. It thus seems that as a rule improvement or non-improvement of tuberculous complications parallels the course of the pulmonary disease rather closely. The authors feel that collapse therapy is a valuable procedure in laryngopulmonary tuberculosis as many far advanced patients can be greatly aided; life not only prolonged and made much more comfortable but the course of the disease often changed from a steady progression to one of improvement and healing.

**Tuberculin Test and the X-ray in Tuberculosis Control.** P. P. McCain. *Southern Medical Journal*, February, 1932.

Anti-tuberculosis workers may be encouraged over the possibilities of bringing the disease under control since even the most hopeful in 1918 did not dream that during the next twelve years the tuberculosis death rate in the United States would drop from 150 to 70.7 per 100,000 and that of the Southern Conference area from 140 to 80.4. This should make us realize that eventual success depends not upon the vague possibility of finding a specific cure but upon a more rigid and wide spread application of the knowledge and methods of fighting which we already have. Tuberculosis now stands seventh instead of first as a cause of death in this country. The reason for the higher mortality rate in the South is that 80 percent of the Negroes in the United States are to be found there and that their death rate is  $2\frac{1}{2}$  to 3 times that of the whites. There is cause to be encouraged here even, for in spite of the comparatively small amount of work done among the Negroes their death rate was reduced 44 percent during the 15 year period prior to 1926.

The most essential factor in the control of tuberculosis is the discovery of cases in the minimal stage—the only time when it is usually curable—also the only stage in which it is not usually communicable. At present the majority of cases are not discovered until they have reached the advanced, incurable and communicable stage. By this time they have usually infected all those living in the home, often through ignorance of their condition or of the precautions necessary to protect the family. Studies have shown that 80 to 90 percent of those living in the homes of positive sputum cases give a positive tuberculin reaction. So long as such conditions prevail tuberculosis will continue to be a major cause of death since there will always be a supply of future victims from those in contact with advanced cases. The failure to make early diagnosis is not always the fault of the physician since most patients do not consult him until their disease has passed the

early stage. Unless they are fortunate enough to have some of the more impressive symptoms very early they are usually not sick enough to go to a doctor. Yet if they wait until they feel sick it is too late to get a diagnosis of an early stage.

Since it is often true that patients with early and occasionally with moderately advanced tuberculosis have neither symptoms nor abnormal physical signs it is necessary for physicians to employ additional procedures to those generally in use in order to discover any large percentage of early cases. Of these measures general use of the tuberculin test and X-ray of positive reactors seems to offer the most hope. While it is not feasible to apply this test to the entire population it is possible to apply it to all known contacts and to all with suspicious history, symptoms or physical signs. The Extension Department of the North Carolina State Sanatorium has given the tuberculin test to 99,653 school children, including several thousand of high school age and 16,000 Negroes during the past five years with only 15.7 percent positive reactors. Since the percentage of positive reactors was much below the average in several rural districts and since the Southern Conference Area is so largely rural with houses separated by open spaces even in the cities, the author feels that not more than 25 to 30 percent of the whole population of the Conference Area would react positively to the test. Since a negative test will almost surely eliminate tuberculosis it would seem fairly easy to thus weed out those needing treatment. It is also very valuable because it often gives patients the first tangible evidence of their danger and overcomes the tendency many would otherwise have to scoff at or ignore any suggestion of their need for examination; this visible proof that they have infected other members of the family will also often cause patients with positive sputum who would otherwise persist in being careless to take the necessary precautions. The X-ray is a great help in discovering early cases hence it is most important that all children giving a positive test be X-rayed—adults with a positive reaction and suspicious symptoms and signs should also be X-rayed. It would be ideal for all individuals with positive reactions to be X-rayed every year if the cost were not prohibitive. It is essential, however, that all positive reactors who have to continue living in an infected environment be X-rayed every year. Such a program can be carried out if all the various groups of anti-tuberculosis workers cooperate closely; it is especially necessary to enlist the family physician. His attitude is apt to be to limit his attention to the individual patient rather than to try to discover early cases. He must be taught that this is as much his professional duty as it is for him to use prophylactic doses of antitoxin or typhoid vaccine when he finds a case of diphtheria or typhoid fever.

The expense of carrying out an extensive program while great, is small compared with the loss resulting from an endless chain of advanced consumptives. While the cost should be borne by the individual whenever possible, many of those needing it most can least afford such expense; close cooperation of the various agencies will make it possible to carry out such a program without prohibitive cost to any of them. The author details the plan followed for the past five years by the Extension Department of the North Carolina Sanatorium.

#### Diagnosis and Treatment of Bronchiectasis. Alton Ochsner. Southern Medical Journal. February, 1932.

Since bronchiectasis is probably the most chronic pulmonary affection found in man it should be suspected in any individual with cough, sputum, slight pyrexia and hemoptysis whose sputum is repeatedly negative for tubercle bacilli. While congenital malformations may be responsible for some cases the majority begin as respiratory tract infections which are followed by dilation. The infections most frequently producing bronchiectasis are influenza, pertussis and chronic bronchitis; chronic infections of the upper respiratory tract which by constant discharge into the lower tract infect the bronchial mucosa producing inflammation, dilation and subsequent fibrosis are also very important. The clinical picture varies with the extent of the lesion and degree of infection; neither profuse, fetid expectoration nor advanced age being necessary for a diagnosis. Diagnosis of the advanced case is easy while that of early cases is very difficult and can be made only by the aid of X-ray after a "contrast substance" has been introduced into the tracheobronchial tree. This should be done in the doubtful or suspected case. The author favors the "passive" technic in performing a bronchography—this consists of the introduction of iodized oil into the tracheobronchial tree following the anesthetization of the anterior tonsillar pillars to abolish the swallowing reflex. Its advantages are that it is easy for both patient and physician and requires no especial training.

Treatment has been unsatisfactory until recent years; while the procedure of choice in a unilateral bronchiectasis limited to a single lobe would be a lobectomy, this is a formidable operation whose results may improve in the future, however, with better technic. Altho this must be reserved for the more advanced lesion, relief of stasis by postural drainage is indicated in all cases and much can be accomplished by its use. The dehydration therapy advocated by the Germans seems to offer relatively little as regards cure. The repeated introduction of iodized oil has frequently given encouraging results with such marked improvement as to justify its use routinely. This improvement is probably due to two factors, (1) the oil tends to displace the secretions and allow them to be expelled, (2) it may exert a bactericidal effect by slowly liberating free iodine. While a return to normal function cannot be expected of a rigid, fibrous, bronchial wall, the infection within the tracheobronchial tree may be controlled by repeated introduction of iodized oil and symptomatic relief obtained in many cases since it is the infection and not the mere dilatation which causes the symptoms.

In the author's series of 173 cases, symptomatic relief lasting over one year's time was secured in 27.2 percent; symptomatic relief with latter recurrence due to renewed upper respiratory tract infection was obtained in 51.4 percent; 20 percent were relieved but are still under treatment; 1.6 percent obtained no relief while none of the cases was made worse.



## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
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### Alterations in the Structure of the Sella Turcica. Karl Kornblum, Arch. Neurol. and Psychiat. 27: 305, February, 1932.

This author states that among the various roentgen manifestations of intracranial disease, the changes encountered in the sella turcica are unquestionably the most significant. A thorough knowledge of the roentgenology of the sella is essential for the proper interpretation of roentgenograms and drawings, showing variations of the normal adult sella. The anatomical relationships of the pituitary fossa and the normal and pathological variations are thoroughly discussed. In a study of 1000 roentgenograms of the skull made at the University Hospital, 10% disclosed alterations in the sella. In another series of 100 verified brain tumor cases, 61% showed sellar deformity.

His conclusions are as follows:

1. Alterations in the structure of the sella turcica, as revealed by the roentgen ray, are, in a high percentage of cases, indicative of intracranial disease.

2. Lesions capable of producing changes in the sella turcica may be classified according to the characteristics of the changes produced, these changes being dependent on the location of the lesion.

3. Deformities of the sella are, in themselves, rarely diagnostic, but when correlated with other roentgenologic observations in the skull, as well as with the clinical manifestations, they offer valuable aid in the localization of suspected intracranial lesions.

### Somatic Disorders of Functional Origin. B. Katzenbogen, Annals Int. Med. 5:1017, February, 1932.

This writer opines that it is hardly possible nor justifiable to make too great a distinction between the functional and organic disorders.

He cites that many diseases, such as chorea, athetosis, Parkinson's disease and Thompson's disease, formerly classed as functional, are now definitely placed in the organic group. He then calls attention to the fact that the manifestations of so-called organic diseases, as angina pectoris and the occurrence and frequency of attacks in symptomatic asthma and biliary lithiasis, are more or less conditioned by the functional state of the autonomic nervous system.

He propounds the theory that definite changes in secretion and motility of organs, and alteration of the physicochemical status of the blood and bodily fluids, accompany functional disorders. These modifications present organic disorders going hand in hand with altered function and are capable of causing as much distress as structural disorders. He suggests the use of the term physiogenic as applied to both "organic" and "functional" disturbances, bearing in mind that in organic disorders the altered function is accompanied by histological changes and in purely

physiogenic disorders, only physicochemical changes may be found. A number of short case reports are presented to illustrate his contentions.

He concludes that:

1. The so-called functional disorders are not "imaginary maladies," and they may cause as much discomfort and distress as organic structural diseases.

2. Functional disturbances may be induced by various factors, physical as well as psychological.

3. A thorough physical examination should therefore be supplemented by a no less thorough inquiry into the conditions within and without under which the troubles originated and developed. Such an investigation is obviously imperative whenever no somatic basis for bodily disorders can be found. Moreover, one should be attentive to the fact that manifestations of organic-structural diseases may also be greatly influenced by psychological factors.

### The Diagnosis of Hyperthyroidism. Maynard E. Holmes, Annals Int. Med. 5:1028. February, 1932.

Holmes calls our attention to the term hyperthyroidism as designating a symptom complex caused by hyperactivity of the thyroid gland, and removes from this classification a large group with a similar symptomatology but not of thyroid origin, whom were formerly included under the term of Graves' disease. He agrees with Moschowitz and others that Graves' disease evolves from a basic neuropathic personality and that only a very small percentage of this large neurogenic group ever develop hyperthyroidism. The real problem in the management of these two groups of patients is not so much that an occasional neurotic individual may develop hyperthyroidism, but from a practical standpoint these two groups must be separated because the thyroid patient demands radically different treatment from the neuropathic one. The confusion brought about by linking the neurogenic group with the thyroid gland not only leads to unnecessary thyroid surgery, but has in the past, been the cause of considerable dissatisfaction with the treatment of hyperthyroidism, and in like manner no doubt explains the disagreement which surrounds the pathology of thyroid disease.

Until the basal metabolism test was introduced as a clinical procedure in 1920, there was no dependable laboratory method to guide one in the diagnosis of thyroid disease. At present, with the help of this valuable clinical test, it would seem that there should be no valid reason for mistaking a neurosis for hyperthyroidism, and yet the error is still commonly made. Hamilton and Lahey, of Boston, report that one-third of the patients referred to their thyroid clinic, after careful study, fail to show any disorder attributable to the thyroid gland.

Failure to differentiate between the true thyroid syndrome and that of neurogenic origin is in great part due to the fact that many practitioners and particularly surgeons seem to underestimate the part played by functional disorders of the nervous system as a cause of many varied symptom complexes.

After calling attention to the importance of the basal metabolism test in thyroid disease he sounds a most timely note of warning: "The value of the

basal metabolic test in differentiating the thyroid from the nonthyroid patient is often vitiated because of errors of technic or interpretation. When the test was introduced, Benedict, DuBois and others cautioned that the procedure could be of little or no value unless performed by one familiar with all the details involved, and using only the most accurate methods. Certain manufacturers have simplified the apparatus and the compilation of the results to such a degree that it is very easy for considerable error to occur. While there can be little doubt that a well trained technician can accurately perform this valuable clinical test, it is quite another thing to have it performed as it commonly is by one who has had no training except perhaps from a circular or a salesman. The performance of this test which carries so much weight in diagnosis should be as carefully guarded as, for example, the Wassermann test."

Hyperthyroidism for the most part is a well defined, yet often not easily diagnosed symptom complex. The most dependable symptoms are (1) definite loss of weight in the presence of a normal or increased food intake, (2) a persistent tachycardia over 80, (3) a constant feeling of warmth or a sensitiveness to heat. On the other hand symptoms often associated with Graves' disease such as fatigue, sweating, tremor, transient rapid heart rate, choking sensations, loss of weight in the presence of anorexia and subnormal food intake, nervousness and emotionalism are more often caused by functional disorders of the nervous system than by thyroid disease. It should always be kept in mind when a goiter is present that nervous symptoms may at times be present and be unrelated to it.

He summarizes as follows:

1. The term Graves' disease, because of its association with the thyroid gland, should be reserved for cases of hyperthyroidism.
2. The large neurogenic group simulating hyperthyroidism and usually classified under the term Graves' disease should be designated by some other term to indicate its neuropathic origin and to avoid association with the thyroid gland.
3. The basal metabolism test is the most important factor in the diagnosis of hyperthyroidism, when properly performed and interpreted.
4. The most dependable symptoms of hyperthyroidism are persistent tachycardia, loss of weight in the presence of a normal or increased food intake and a sensitiveness to heat.
5. Hyperthyroidism should be diagnosed with caution under the following conditions; in the presence of mental symptoms, when symptoms are mild and the metabolic rate is from plus 15 to plus 35, when there is marked chronicity of nervous symptoms and in cases under age 20.

**Tibial Flexion of the Big Toe—New Pyramidal Reflex.** LomTadse, G. T., *Journ. Nerv. and Ment. Diseases*, 75:149, February, 1932.

This test is considered positive when pressure on the outward side of the os tibia with the thumb sliding along the tibia to its middle third produces a flexion of the big toe.

The author submits 280 cases and concludes that the appearance of this reflex points to the presence of a lesion in the cortico-capsular region and in the medical cerebral artery and its deriv-

atives. This artery is known to be the frequent seat of cerebral hemorrhages and thromboses, and he states that the presence of this reflex is sufficient reason to warn patients against procedures which give strong reactions of the central nervous system, such as baths of carbonic acid or hot mud.

## DERMATOLOGY AND SYPHILOLOGY

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**Reactions Following The Administration of the Arsphenamines and Methods of Prevention.** Ireland, Franklin D., *Amer. Jour. of Syph.* 16:22, (Jan., 1932).

In a study of 2100 patients treated for syphilis the author found 236, or 11.2 per cent had reaction of various kinds, following use of the arsenicals, chiefly arsphenamine and neoarsphenamine. Of these reactions the most frequent was nausea and vomiting (70 per cent). Following gastro-intestinal reactions in order of frequency were: nitritoid reactions (14 per cent), chills (6.3 per cent), jaundice and hepatitis (2.3 per cent), urticaria (1.6 per cent), arsphenamine dermatitis (1.6 per cent), all others (4.2 per cent). It is noteworthy that no Herxheimer reactions were recorded, probably due to the fact that in case of doubt as to the tolerance of arsenicals, preparatory treatment was given.

Old arsphenamine was responsible for a higher percentage of reactions than neo-arsphenamine, and women were twice as often affected as men. Most reactions occurred early in treatment, between the first and tenth injections.

Among the methods of prevention of reactions, none proved efficient in every case, but the most promising were the preliminary administration of: (1) atropine sulphate, 1-75 grain hypodermically, (2) adrenalin, hypodermically, (3) ephedrine, per os, (4) calcium gluconate intravenously. The Bezredka antianaphylaxis technic of dividing the dose also proved useful.

A review of the literature of the past six years on the subject of arsphenamine reactions reveals that the pathogenesis of nearly all types of reactions is still obscure in spite of diligent studies into the modes of production.

**Dispensary Treatment of Syphilis.** Hazen, H. H., *Amer. Jour. of Syph.* 16:1, (Jan. 1932).

Dispensary treatment of syphilis has failed in a number of respects, and the author suggests methods by which their results may be improved.

In order to make treatment as simple as possible, especially for patients of the "floating" type, Hazen suggests the following routine for early syphilis:

1. Twelve injections of arsphenamine, the first at semi-weekly intervals, the remainder at intervals of five days.
2. Ten intramuscular injections of bismuth at weekly intervals.
3. Ten injections of arsphenamine at five day intervals.
4. Ten injections of mercury salicylate at weekly intervals.



In late syphilis the following scheme may be used:

1. A course of intramuscular bismuth, lasting from six to ten weeks.
2. Six injections of arsphenamine at intervals of one week.
3. Eight to twelve injections of insoluble mercury salt once a week.
4. Six injections of arsphenamine at weekly intervals.
5. Another course of either bismuth or mercury.

Of course such a scheme must be modified because of some peculiarity of the patient; neurosyphilis, cario-vascular syphilis, associated tuberculosis, reactions due to treatment, etc., will make vast differences in the program. The routine given above is frankly based upon the spirocheticidal action of drugs rather than upon a method which employs the defensive powers of the host, but at least it has the merit of rendering the patient harmless to his associates.

#### Hygiogenesis of Warts Disappearing Without Topical Medication. Zwick, Karl G., Arch. Dermat. and Syph. 25:508, (March, 1932).

The state of our knowledge concerning the response of warts to treatment is described by Sir Norman Walker's remark, that: "... the ways of warts are mysterious, and they sometimes disappear in a few days under methods of treatment at which in the days of one's youth one was inclined to scoff." All the old hocus-pocus magic cures for warts are recited by Dr. Zwick, who then goes on to discuss more modern methods such as electro-coagulation, irradiation, injections of sulpharsphenamine, auto-hemotherapy, etc. He then discusses Bloch's publication, who was able to cure 50% of common warts by suggestion, a scientific adoption of ancient magic. The author speculates on the causes of the cure of this homely condition in an ingenious and highly entertaining manner.

#### Some Observations on The Treatment of Syphilis. Cole, Harold N., Am. Journ. of Syph. 16:9, (Jan. 1932).

Cole believes that while bismuth is probably a remedy superior to mercury there has been too great a tendency to discredit the latter. He has discarded the use of sulpharsphenamine entirely, believing it too liable to produce severe reactions. Tryparsamide he considers very valuable in the treatment of central nervous syphilis, and employs it after malaria therapy.

Cole believes in the continuous method of therapy rather than the intermittent method still much in vogue.

He is employing malaria therapy more and more, not only in paresis, but any resistant syphilis of the central nervous system. He has also employed it with success on certain Wassermann-fast types of syphilis. The risk employed in malaria therapy is minimized by careful checks on the patient's blood pressure and blood chemistry. Also he thinks the bloods should be routinely typed.

### SURGERY AND GYNECOLOGY

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**Hemorrhagia Thrombocytopenia in Childhood: A Clinical Study of Twenty-One Cases.** Stanford McLean, M.D.; Katherine Kreidel, A.B., and John Caffey, M.D., New York. *Journal of the American Medical Association*, January 30, 1932, page 387.

This is a very interesting article because of the age of the patients who are reported. There were twenty-one patients aged from 19 months to 12 years, the average being 4 8-10 years. Only one patient was less than 2 years and six were over 4 years of age. Seven were females and fourteen males. There were no racial limitations. Twelve were blonds, seven were brunettes and two were Negroes. In only one of the cases was there a history of purpura in the family.

The treatment in these cases consisted of rest in bed, transfusions or splenectomy. The authors placed particular stress upon the results obtained from the different methods of treatment used. They think that the term "hemorrhagic thrombocytopenia" is a more satisfactory one than either purpura hemorrhagica or thrombocytopenic purpura because purpuric manifestations are not essential to the disease and they are frequently the least important of the hemorrhagic features. The lack of any immediate factor to account for the onset of the hemorrhage was also striking. The initial onset of the bleeding and the relapses in chronic cases developed spontaneously. The relation of infection to the hemorrhagic manifestations in these cases is interesting in view of the role that certain infections (smallpox, measles, diphtheria, typhus, tuberculosis and syphilis are known to play in the production of bleeding thrombocytopenia. In twelve of the patients the history indicated that previous definite infections preceded the onset of hemorrhagic symptoms. In two cases bleeding followed measles. In one case it followed pneumonia. Nine patients had had infections of the upper respiratory tract. It is notable that in only one case did the onset of bleeding and infection parallel each other.

The delay in the appearance of hemorrhagic manifestations after the acute infections and the absence of bleeding in the earlier phases of these infections suggests the possibility, clinically at least, that thrombocytopenia may be an allergic manifestation in the bone marrow affecting particularly the megakaryocytes.

The diagnosis rested on clinical evidence of hemorrhage, a low platelet count, a prolonged bleeding time and delayed retraction of the blood clot. There were no significant changes in the blood except anemia, secondary to hemorrhage, in some of the cases. The tourniquet test was not regarded as being of value. All cases of hemophilia, leukemia, aplastic anemia, agranulocytosis, syphilis, tuberculosis and known chemical poisoning have been excluded.

With the results obtained with the untreated cases (bed rest and ultra violet radiation alone) it seems to be true that there are cases both mild and severe, both acute and chronic in which recovery occurs without transfusion or splenectomy.

From the results obtained following transfusion it would seem that this procedure accelerates the tendency to arrest of hemorrhage and the return of the platelets to a normal level.

The spleen was removed from only six of the twenty-one cases, the indication being excessive free bleeding from the mucous surfaces. These represent the more severe cases clinically, although some of them did not exhibit the most severe thrombocytopenia.

Following splenectomy, the results were favorable in only three of the operative cases.

The wide range of the platelet level and the importance of evaluating thrombocytopenia only in conjunction with clinical observations is emphasized.

The authors' conclusions are as follows:

1. Hemorrhagic cytopenia is frequently preceded by infection.

2. The minor fluctuations in the platelet count after it has fallen to a pathological level are devoid of clinical significance; these fluctuations should not be used alone as criteria either of remission or of relapse, nor should these minor changes in the platelet count be used alone as indications for removal of the spleen.

3. The clinical evidence of hemorrhagic activity are the most valuable guides in prognosis and in the indications for splenectomy.

4. Spontaneous remission occurs in a large percentage of cases; transfusion frequently accelerates remission. Splenectomy causes the most rapid remission; it is not uniformly successful and is always a dangerous procedure.

5. Splenectomy should be reserved for a small group of cases: (a) those with fulminating uncontrollable hemorrhage; (b) those with chronic hemorrhage which interferes with normal growth and development or is a handicap to the well being of the patient.

**Comment:** The authors have made an excellent and instructive study of this disease in a goodly number of very young children. There is undoubtedly a tendency toward spontaneous remission, and this would be an excuse for procrastination. The danger of no treatment or resorting to transfusion alone is that the disease may so progress that the bone marrow and megakaryocytes may be exhausted or completely destroyed before a splenectomy is done. This apparently occurred in three of the six cases in this series which were operated upon. I have had it occur in one of my cases. The operation, splenectomy, under such circumstances cannot be properly charged with these deaths, but rather to the patients' unfavorable pre-operative condition. It is well to be conservative, but at the same time in this disease where splenectomy has given such prompt and complete relief in the great majority of instances, the medical attendant should not withhold this life saving procedure until it is hopeless and useless. —LeRoy Downing Long.

**The Results of Treatment of Mammary Carcinoma by Surgical and Irradiation Methods at the Memorial Hospital, New York City, During the Decade 1916 to 1926.** By Frank E. Adair, M.D. of New York, N. Y. *Annals of Surgery*, Volume XCV, March, 1932.

The author has reported a series of 199 primary operable cases of mammary carcinoma with complete data for a period not less than five years.

He has pointed out that the percentage of five year "cures" by surgery alone ranges, in good hands, from 32% to 36%. Whereas, a combination of radical surgery with pre-operative and post-operative irradiation gives five year results of 40%.

He has very ably discussed the criteria of operability and has described the pathology of cures by irradiation methods alone. He points out that irradiation "cures" are produced by locking up the local disease in dense fibrous tissue and starving the disease process by endarteritis, and the direct insult to the cancer cell which is produced by the rays. In other words, in a "cure" by irradiation a pathological specimen may show cancer cells surrounded by dense fibrous tissue, very much as an arrested tubercle.

He points out that breast carcinoma is considered relatively radio-resistant, and that interstitial radiation should be used in attempts at irradiation alone, because the staff at Memorial Hospital believes that external irradiation alone by radium packs and high voltage X-rays is, as a rule, not sufficient potent therapy to affect cures in mammary carcinoma. Dr. Adair presents a 36% five year "cure" from irradiation alone.

He points out very justly that the most effective manner of treatment is combination of irradiation and surgery with a 40% five year cure. However, irradiation offers a substitute weapon with but slightly less effective results (36%) in cases where surgery is contraindicated.

**Comment:** Though we have not collected our cases for report, it is our distinct impression that those who have had pre-operative and post-operative X-ray irradiation do better, and have a greater chance of five year cures than do those without the pre-operative and post-operative irradiation. Of course, each case should be individually evaluated, but where there is no contraindication it is our judgment that in carcinoma of the mammary gland pre-operative and post-operative external irradiation should be combined with radical surgery.

—Wendell Long.

**Infertility and Sterility. An Analytic Study of Three Hundred Couples.** By Irving F. Stein, M.D., and Michael L. Deventhal, M.D., Chicago, Illinois. *The Journal of the American Medical Association*, Volume 98, February 20, 1932.

This report from Michael Reese Hospital serves as an excellent guide in the investigation and therapy of this essentially important subject. This is largely true because it outlines a complete but very practical plan of attack.

In addition to a careful review of the proper sort of routine and its application, they report a series of 300 couples investigated and treated in their clinic. It is interesting that female causes were found in 89.4%, male causes in 28.8% and both male and female in 18.1% of the sterile matings. The point is justly made and cannot be too often repeated that the investigation must start with, or at least consider at the same time, the male as a cause for the infertility or sterility. They also point out that tubal patency tests were done in only 61.3% of the cases in the sterility group. While it is considered an important part, together with utero salpingography, in a complete investigation in the infertility group, in the sterility group other apparent causes for the sterility



are corrected before this procedure is done, and frequently pregnancy ensues, saving the patient the added and useless investigation.

In the surgical treatment, linear cauterization for chronic endocervicitis was the most frequently employed measure. Salpingostomy was done in 5 cases, "carefully selected," with subsequent pregnancy in two.

The fact that 58 women in their series of 300, or 19.3%, became pregnant after investigation and treatment, demonstrates the value of this type of work.

**Comment** The investigation for sterility and infertility, to be effective, must be based upon a definite and rational routine, and never carried out in a hit or miss fashion. This does not mean that in every case of infertility or sterility the complete routine should be employed regardless. Certainly tubal insufflation and utero salpingography should only be used after the completion of all other investigations. In this circumstance it is then an invaluable aid.

—Wendell Long.

**The Treatment of Carcinoma of the Cervix by Vaginal Hysterectomy and Radium.** By L. Adler, M.D., Vienna, Austria. *American Journal of Obstetrics and Gynecology*, Volume XXIII, March, 1932.

Ludwig Adler has presented in this article the history and reasons for the development of the technic of a radical vaginal operation combined with the post-operative insertion of radium in the treatment of carcinoma of the cervix. He outlines the technic employed, but at the same time emphasizes that each case has to be considered as an individual problem.

The most significant thing about this article is the presentation of the statistics for 5 year cures without recurrence. In comparison with radiation, operation and the combination of vaginal operation and radiation are as follows:

1. Five year cures from radiation in the best of hands, 23 to 23.6 per cent.
2. The best figures for operation alone (Bonney), 25 per cent.
3. Adler's figure for operation and radium, 31.8 per cent.

**Comment:** In treating cancer of the cervix, as well as cancers elsewhere, we all appreciate the fact that we are at this time limited to attempts at local therapy, either radical surgery, extensive radiation or a combination of both. It is still my opinion, for reasons outlined in an article in this journal of December 1930, that radio therapy is the most acceptable treatment for carcinoma of the cervix in all groups of this disease. However, it must be emphasized that early recognition and adequate and intelligent use of the radiotherapy are essential to good results.

The importance of Adler's article lies in the fact that his statistics show about 9 per cent increase in the five year cure percentage. This is too large a difference to be ignored, and it may be that this work is in the right direction for better treatment of this difficult disease. However, I do not believe, for many reasons, that it justifies any change of present irradiation therapy, but that it is a piece of work well done, and of considerable significance as a guide in this difficult field of therapy.

—Wendell Long.

**Tuberculosis Cervical Adenopathy and Carious Teeth** (*Les Adenopathies Servicales Tuberculeuses et le Caries Dentaires*) by Jean Veyrasat, *La Presse Medicale*, February 6, 1932, Page 195.

The author emphasizes the belief that the original lesion in tuberculous lymph glands is practically always tuberculous foci in the mouth or nasopharynx, the most common source being in connection with carious teeth, especially after the age of about 12 years. He insists that this fact should have a place in surgical pathology and points out that, in France, only Ombredonne and Broq have consecrated a chapter to its study.

Two life periods are considered—first, from infancy to about 12 years. The second period from about 12 years to about 25 years.

In the first period, adenopathy from tuberculous foci about the teeth is less frequent than in the second period, adenoids, infected tonsils, nasopharyngeal infections being relatively common sources in childhood. He believes that in the second period—that is, from about 12 years to about 25—the adenopathy is practically always the result of tuberculous infection from carious teeth.

It is the belief of the author that the infection is carried by way of lymphatics in connection with the pulp of teeth, and he cites the experiments of Solkower, published in 1927, as proof that such lymphatics exist.

As a means of prevention, insistence is made that the teeth receive uniform and appropriate care, especially during the periods mentioned.

As a means of treatment, it is insisted that the teeth receive the first attention, with the removal of those that are diseased. Cases are cited in which other operative procedures were necessary in connection with cervical adenopathy due to tuberculous infection.

—LeRoy Long.

**Cervical Rib (La Cote Cervicale)** by M. Nathan, *La Presse Medicale*, January 10, 1932.

The case of a tall and robust young woman is reported. At the age of 20 she first noticed pain in both arms, especially on using a typewriter or playing a piano. The pains were intermittent, capricious, and not definitely localized to the distribution of any nerve. There was no atrophic trouble. The arm reflexes were normal. Pressure over the spine and over the different nerves of the arm did not cause pain. Only pressure at one point, deeply behind the sterno-cleido-mastoid caused complaint of pain. There was no stiffness of the neck. An X-ray film seemed to be negative. This was the history of the condition before the patient was seen by the author. During that time the pain had become more troublesome with considerable disability of the arm.

Sometime before the patient was seen by the author there had been a diagnosis of tuberculous spondylitis and she had worn a plaster of Paris cast about the neck and upper back for awhile, but without any good effect.

Finally, another series of X-ray films in different directions was made, and they disclosed a small bony mass about the size of the head of a big nail ("une petite masse osseuse, grosse comme la tete d'un gros clou") unequally ossified could be seen on each side, and it was decided, in

spite of the smallness of the opacities, that the symptoms were due to bilateral cervical ribs.

A surgical operation was done by a confrere, Robineau, who removed both cervical ribs at the same seance.

The post-operative course was very unsatisfactory. There was paralysis of the arms for a week, obviously due to pulling on the brachial plexus, after which motor function was progressively restored. The pain persisted for several months, and then improved in an interesting way. Certain movements became painless, while pain persisted with certain other movements. Finally, however, after four years, there was no more pain.

The well-known fact that, while a congenital anomaly, cervical rib frequently does not cause any symptom until adult life, is mentioned. There is no satisfactory explanation.

Note: Operation for the removal of a cervical rib is tedious and trying, and, as in this case, not entirely satisfactory. A far more satisfactory operation is the division of the scalenus anticus through which pressure is removed, as suggested by Adson, of the Mayo Clinic.

—LeRoy Long.

## BOOK REVIEWS

**Fertility and Sterility in Marriage.** Their Voluntary Promotion and Limitation, by Th. H. Van De Velde, M.D., formerly Director of the Gynecological Clinic at Haarlem, Holland, Translated by F. W. Stella Browne. Covici, Friede: Medical Books, New York, 1931.

**A Doctor of the 1870's and 80's.** By William Allen Pusey, sometime President of the American Medical Association and of the American Dermatological Association. Charles C. Thomas, Publisher, 1932. Springfield and Baltimore.

A doctor of today who recalls the Aladdin's Lamp, like changes which began to occur in Scientific Medicine in the 1870's and 80's, has much to look back over and much to ponder over. Dr. Pusey is brilliantly prepared to discuss the changes of medicine which have occurred within the last fifty or sixty years. This is an intimate statement of the problems confronted and met by a doctor in 1870 and 1880.

**Accidental Injuries.** The Medico-Legal Aspects of Workmen's Compensation and Public Liability. By Henry H. Kessler, A.B., M.D., F.A.C.S., F.A.P.H.A. Medical Director, New Jersey Rehabilitation Clinic; Formerly Medical Advisor, New Jersey Workmen's Compensation Bureau; Consulting Orthopedic Surgeon, Irvington General Hospital and Essex County Hospitals; Associate Orthopedic Surgeon, Newark Beth Israel Hospital; Assistant Orthopedic Surgeon, Newark City Hospital, Hospital and Home for Crippled Children; Chairman of the Committee on Standard Practices in Compensation for Occupational Disease, and Chairman of the Subcommittee on Standards of Diagnosis and Prognosis of Lead Poisoning, American Public Health Association; Member of the Society of Medical Jurisprudence; Medical

Director of the Occupational Disease Clinic in the New Jersey Department of Labor. Octavo, 718 pages with 157 illustrations. Cloth, \$10.00, net. Published 1931, Lea and Febiger, Philadelphia.

The past two decades have brought about an enormous amount of legislation for the workman's compensation, insurance liability in his many and diversified aspects. The machine age undoubtedly has enormously increased injuries with resultant deformities, notwithstanding that every device, as a rule possible, is thrown about the worker to prevent his injury. This work by Kessler is remarkable for its wide scope and for its special and peculiar adaptation to various vocational injuries, diseases and infections with their results. The book is divided into twenty chapters, each of which has appropriate subdivisions covering the matter under consideration. Certainly every surgeon and physician having to do with accidental injuries, appearance before the courts and Industrial Commissions, should have this book in his library.

**Surgical Pathology of the Female Generative Organs.** By Arthur E. Hertzler, M.C., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas, Professor of Surgery, University of Kansas. 285 illustrations, Price \$5.00 J. B. Lippincott Company, Philadelphia, Montreal and London.

As noted before few men in the United States are as well prepared to discuss pathology as is Dr. Hertzler. This is the fourth of his works on Surgical Pathology and will prove of great interest to gynecologist, surgeon and pathologist.

**The Surgical Clinics of North America.** (Issued serially one number every other month.) Volume 12, No. 1. (Chicago Number—February, 1932). 240 pages with 92 illustrations. Per Clinic year (February, 1932 to December, 1932). Paper \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

Among the interesting articles noted in this issue are those by Dr. Edwin W. Ryerson, on "Cerebral Spastic Paralysis"; "Fracture of the Femur" and "Deformity of the Elbow," all important surgical and orthopedic propositions. Dr. Kellogg Speed writes on "Common Peripheral Nerve Lesions." Dr. Frederick B. Moorehead on "Lesions of the Jaw, Nose and Cheek; Cleft Lip and Cleft Palate; Cartilage Transplant; Tube Graft." Dr. Herman L. Kretschmer on "Benign Hypertrophy of the Prostate." Drs. Carl A. Hedblom and Willard Van Hazel on "Surgical Treatment of Early Pulmonary Tuberculosis." Dr. Loyal Davis on "Intracranial Meningiomas," Dr. Hugh McKenna on "Old Intracapsular Fracture of the Neck of the Right Femur"; "Comminuted Fracture in the Lower Third of the Right Femur"; "Fibroids of the Uterus Associated with Rapid Heart (without an Established Relationship Between The Fibroids and The Rapid Heart)." "Papillary Adenoma of the Sigmoid with Marked Subacute Inflammatory Changes"; "Acute Appendicitis." Dr. George E. Shambaugh presents "Acute Otitis Media Complicated by Mastoiditis"; "Chronic Maxillary Sinusitis"; "Chronic Suppurative Otitis Media Complicated By a Cholesteatoma and With The Development of a Fistula In The Horizontal Canal." Dr. Golder L. McWhorter on "Results of Reconstruction of the



Common Bile Duct;" "A Case Eight Years After Hepaticoduodenostomy For Congenital Dilatation of the Common Bile Duct; Recent Diabetes Mellitus"; "Experimental Suture of the Common Bile Duct With New Methods of Anastomosis. Result Two and One-Half Years After Operation"; "High Transverse Extraperitoneal Incision For Nephrectomy: Its Advantages, Surgical Anatomy and Operative Technic." Dr. George M. Curtis presents "Juvenile Thyrotoxicosis." There are other interesting contributions in the book.

**Surgical Errors and Safeguards.** By Max Thorek, M.D., Surgeon-in-Chief, The American Hospital, Chicago; Attending Surgeon, Cook County Hospital; Corresponding Member, Societe Des Chirurgiens De Paris, France; Associate, Royal Academy of Medicine, Torino, Italy; Honorary Corresponding Member, Egyptian Medical Association, etc. With a foreword by Arthur Dean Bevan, M.D., Professor and Head of the Department of Surgery, Rush Medical College of the University of Chicago. Price \$10.00. 668 Illustrations, Many Colored. J. B. Lippincott, Company, Philadelphia.

In an introductory Dr. Bevan notes that in the last fifty years, the practice of medicine has become more and more surgical. But the great increase in surgical procedure has brought with it two new and serious problems, that is, the doing of some unnecessary operations, and the performance of operations by men who are relatively incompetent. While the great majority of operations are desirable and necessary and done by men competent to do them; on the other hand, many operations are done which may not be necessary, and many are badly done by the incompetent. This can only be done through ignorance, dishonesty and bad judgment. The medical student and practitioner should be taught that when he undertakes the treatment of a patient he makes a contract with the patient that is legally binding, to give the patient the benefit of the knowledge possessed by men trained in the science of art and medicine, at the place and time the services were rendered.

Dr. Thorek states that no surgeon, no matter how skillful or proficient he may be, should ever consider himself beyond the possibility of error or accident. He also notes that in the textbooks on surgery there are scattered descriptions of possible accidents and mishaps in different surgical procedures and the textbooks tell us what to do and how to do it; but it seldom tells us what not to do, how to avoid complications and technical errors or how to act when face to face with some of the abnormal circumstances which constantly present themselves during the course of a surgical operation; that while it is human to err, it is inhuman not to try, if possible, to protect those who entrust their lives in our hands from avoidable failures and danger.

This is a remarkably fine work on surgery. The thousands of errors which may easily occur in the practice of any man are noted and advice as to how they may be avoided or detected is given. The work, is divided into 16 chapters with their necessary subdivisions. The writer believes it is one of the most practical and entertainingly readable works on surgery recently issued.

#### ROENTGENOLOGIC DIAGNOSIS OF LEAD POISONING IN INFANTS

Edward C. Vogt, Boston (Journal A.M.A., Jan. 9, 1932), emphasizes the fact that lead poisoning in children is more common than generally suspected and may be the cause of obscure neurologic and gastro-intestinal complaints. The chief source of lead affecting the health of infants and children is paint chewed from furniture, woodwork and toys. Other sources are waterpipes, nipple shields and household utensils. When absorbed into the body, lead is stored in the bones and can be detected on the roentgenogram as a dense band at the growing margins. Its elimination can also be followed. The roentgenologic signs are very constant but specific and therefore confirmatory evidence is necessary.

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## THE URINARY TRACT AS A FOCUS OF INFECTION IN ARTHRITIS

BASIL A. HAYES, M.D.  
OKLAHOMA CITY

Arthritis has become such an important question during the past few years that any kind of study which will elucidate the question of etiology is worthwhile. It is commonly regarded as a disease due to uncured foci of infection, and the only real progress which to my knowledge has been made during the past twenty years has been based upon this assumption. The common regions of the body which are thought of as harboring bacteria over a long period of time with or without local activity are:

1. Teeth.
2. Tonsils.
3. Prostate and vesicles.
4. Sinuses and bronchi.
5. Intestines, including appendix and gallbladder.

Of these regions the first three are commonly held to be guilty of the most harm, and facts seem to bear this out. Pemberton in his recent book quotes roughly that in all the cases studied by him, 50% had infected teeth, 31% had infected tonsils, and 15% had infected genitourinary tracts. These figures leave the sinuses and intestinal tract out entirely. Clinical experience of most men will confirm such conclusions.

In my own experience genitourinary infections have undoubtedly played a more important part as causative agents than is shown by Pemberton's figures. I took occasion recently to list the cases of arthritis which have been in the University Hospital during the past year or so, and found a striking fact. Out of fifty cases,

the only focus definitely demonstrated was in 40% a genitourinary one. In 42% there was a genitourinary infection plus an infection in either teeth or tonsils. In other words, 82% had infection along the urinary tract and only 18% did not have it, but were infected in teeth or tonsils or both. And of the entire number 40% had only genitourinary infection. Certainly a strong indication that teeth and tonsils are not so important in this hospital, as they seem to have been elsewhere.

Such a discrepancy in figures leads me to remark that I doubt the accuracy of many figures given along this line. Particularly in figures concerning women, how often is a careful history taken regarding venereal disease? And again, how much less often is a careful search made for pus in the urine or bacteria in the smear from cervix or urethra? Every tonsil has bacteria in it, and rare is the mouth which has perfectly healthy gums and roots. These are all put down, while the urinary tract is skimmed over and only the grosser or more active infections are caught. I have on numerous occasions examined urine and found no cells in it, then massaged the prostate and found a large amount of pus, which of course was due to infection. If these examinations are not carefully made by trained men (and they usually are not) the reports are bound to be inaccurate.

Genitourinary infections are exceedingly numerous. Pelouze states that from 80% to 90% of all men have gonorrhea some time during their lives. I rather think this figure is correct. Certainly it is not too

high. Of this number at least 20% suffer from "complications," meaning that the disease goes back into the posterior urethra and involves the prostate and seminal vesicles. In other words almost one-fourth of our entire male population suffers at some time or other a gonorrheal infection of the prostate and vesicles, which invariably lasts three months or more and produces a perfect incubation bed for secondary organisms. Some of these suffer at the time frank gonorrheal rheumatism, monoarticular, severe, and disabling. Others recover and go along for some years apparently well, then develop multiarticular lesions of less severity. Pemberton states that the greatest incidence of arthritis in men is between the ages of 36 to 46, which fairly well accords with this class. Among the older men, Young and Hill have found that 70% of all prostates are infected. 42% of these were infected with staphylococci, 20% with *B. Coli*, 5% with streptococci, 1% with gonococci, and 2% with other organisms. This certainly accords with my own experience, for I find pus in the majority of prostatic smears taken from men past 40. I do not mean to say that every man who develops infection in his prostate has had gonorrhea, for such is not true. There are other causes of infection such as obstruction, congenital deformities, constitutional diseases etc.

Considering the question of infection as a single process, regardless of the type of organism, the invasion usually takes the following form: the portion of the prostate nearest the urethra is first involved, producing a periurethral prostatitis. This is mild in nature and always occurs when gonorrhea extends to the posterior urethra. It usually subsides fairly promptly and leaves slight traces afterward. It may, however, from trauma, strong drugs, drinking alcohol, exposure, heavy exercise, or sexual abuse, extend further into the gland and involve all of it, sometimes even causing a pelvic cellulitis around the entire neck of the bladder. Such an extension is almost always accompanied by an extension into the seminal vesicles and ampullae of the vasa deferentia—which is a region very difficult to drain, treat, or even diagnose. The prostate is like a sponge, and has many openings into the urethra, hence is fairly easily drained and cured; but the seminal vesicles are like sacs or long tubes, folded on themselves and almost impossible to drain even surgically, much less by massage. If we remember that the ejaculatory duct passes directly through

the prostate, it is perfectly easy to see that when the prostate is swollen the seminal vesicle cannot empty, no matter how much massaging we do, because the duct is squeezed off by the edematous gland. Under such circumstances something is bound to develop, and the commonest thing is rheumatism. After the prostatic swelling is gone, the vesicle still cannot empty, because the long continued harboring of infection has left its walls stiff and fibrosed so that their peristaltic action is greatly interfered with if not stopped entirely. I recently had a case where the vesicle filled up and formed an abscess as large as a baby's head, filling the entire pelvis and pointing in the midline above the symphysis. I drained it extraperitoneally, but the sepsis was so great that the patient died. For two weeks he had been in the hospital, very septic, but with no possibility of a diagnosis because his lesion was entirely out of reach of any method of examination we now know. Finally when the swelling reached forward and became visible and palpable we attacked it. That patient undoubtedly had suffered a chronic infection for years without knowing it.

The prognosis in cases of infection in this area is quite good if modern methods are followed. Gonorrhea is ordinarily a self limited disease and responds nicely to treatment without trauma. When it gets into the prostate and vesicles it naturally takes longer to get well, because such immunity as develops and finally kills it out is a tissue immunity and not a general bodily immunity. In other words the urethra can be getting well when a brand new process is just starting in the seminal vesicles, which in turn must build up a resistance and throw off the infection. It can be done, however, and ordinarily is done in from eight to sixteen weeks. Patients who have cooperated and who have been properly managed will at this time be entirely free of gonococci, though the organs are always left scarred and fibrosed, so that catarrhal infections can easily come in and remain during the balance of the patient's lifetime. Getting rid of such secondary infections and staying rid of them is very difficult under ordinary methods of treatment, which again accords nicely with the prognosis in chronic arthritis. We can in all instances rid the patient completely of his infection if we can be radical enough, but conservative doctors dislike to urge a severe operation



without knowing for certain that it will cure the disease.

The methods which are advocated by the best authorities today are as follows: first, a course of massages, carried out thoroughly about every three days, and accompanied by a deep injection of 5% argyrol or similar drug. This massage should be done before the patient urinates, and the drug should be injected after he urinates. Such treatment should be accompanied by an injection of .6 gms. neo-salvarsan or sulpharsphenamine every five days intravenously for about six doses. If these measures do not suffice, the arsenicals should be supplanted by 1% mercurochrome, giving not more than 4 or 5 c.c. at each dose, and giving it every other day. If the patient is still not well, vasotomy should be done injecting the drug directly into the vesicles through the vas deferens. Finally, if all else fails and the disease is

severe enough, we can do a radical excision of the vesicles through the perineum. Morissey has reported excellent results in desperate cases by this method.

Summarizing this matter, I would say that from the experience I have had in treating patients for various conditions caused by focal infection, from figures given by different observers, and from a series of fifty cases recently studied in University Hospital, it is my judgment that infections of the urinary tract are much more frequent and damaging than are generally supposed. The peculiar anatomy of this region renders it very difficult to diagnose the infection unless careful and thorough methods are followed. Treatment is equally tedious and difficult, requiring care and expert procedures, sometimes major operations. If such care is had, however, the prognosis is good for eradication of the focus.

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## CYSTS OF THE UPPER ABDOMEN WITH SPECIAL REFERENCE TO SOME POINTS IN DIFFERENTIAL DIAGNOSIS

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W. P. NEILSON, M.D., D.N.B.

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Early in his career the medical student is told—"always think first of the most common condition when arriving at a diagnosis." Certainly no advice is more prudent than this, it is inevitably an excellent rule. The physician must not, however, think so consistently of the common conditions that he forgets the existence of certain rareties, especially those conditions which are seen frequently in a large series of cases. Undoubtedly the popularization of the term "surgical abdomen," looked upon as a subject for so-called "laparotomy," has produced in no small way an obstruction to accurate diagnosis. It offers the surgeon, more particularly a fortification behind which lethargic tendencies may have a large range. In the end however, the patient and not the surgeon is the loser. One cannot possibly question the benefits to be derived from accurate

diagnosis before surgery is resorted to. Unfortunately there are many cases which cannot be accurately diagnosed preceding surgery, at the same time we must concede that these cases are multiplied many fold by this barrier of exposure. Consequently many exploratory operations are done, the abdomen being opened with little thought having been given to the probable conditions found therein, and oft times the surgeon is more or less startled by the condition found, being unable to take care of the situation as intelligently as he might have, had his preoperative diagnosis been more complete.

There are a group of pathological conditions found in the abdomen which are not infrequently a surprise to the operator. These conditions are frequently inaccurately diagnosed before surgery.

These cysts of the upper abdomen are seen rather consistently in a large surgical service. The history usually is that of an acute onset, the primary pathology being masked by these acute symptoms to such a degree that the characteristic chronicity is overlooked. For this reason these conditions are frequently found as a surprise to the operator. I have as a basis for this belief several case reports as well as personal experiences.

#### CYSTS OF THE PANCREAS

The pancreas is oblong and flattened, it is situated transversally across the posterior wall of the abdomen, at the back of the epigastric and either hypochondriac area. It is six to ten inches in length.

Cysts of the pancreas have been variously classified. They are perhaps more simply conceived by classification according to etiology, and spoken of as:

1. Congenital.
2. Traumatic.
3. Inflammatory.

Congenital cysts of the pancreas are seldom seen but do occur, usually congruent with malformation of the pancreatic ducts.

Probably most pancreatic cysts are a direct result of trauma, usually giving a history of having received a blow in the upper abdomen, this blow being followed by symptoms of pain and swelling in this region.

Other cysts of the pancreas seen, occur usually in adult life and give no history of trauma but a history congruent with that of attacks of acute or chronic pancreatitis.

Although yielding no pathognomonic signs or symptoms there are certain points more or less characteristic of cysts of the pancreas which aid materially in differential diagnosis. As a cyst increases in size it usually pushes the transverse colon downward and the stomach up and to the right upper abdominal quadrant. The normal position of the gland is posterior to and between these two structures. As a consequence we see a mass in the upper abdomen between the xiphoid and the umbilicus. This mass is tense and cystic, it is relatively immobile. Pain is a constant accompanant, in most of the cases with acute exacerbations.

In a few cases diabetes mellitus is associated, but this is not usually the rule.

The stools are large, evidencing reduction in utilization characterized by the proper function of pancreatic ferment. Undigested muscular fibers are numerous. Diastatic ferment is found in urine, according to Wohlgemuth-Noguchi method.

#### CYSTS OF THE SPLEEN

The spleen is flattened and oblong, it possesses a brittle consistency but is soft to touch. It is extremely vascular and located in the left hypo-chondriac region. Its external surface is convex while the internal surface is slightly concave. Its upper end contacts the diaphragm, while its lower end contacts the left extremity of the transverse arch of the colon. The anterior margin is free, notched and rounded. The posterior margin contacts and is connected with the superficial layers of the left kidney.

Virtually everyone who has written on the subject has given a different classification of these cysts. A simple classification is as follows.

1. Traumatic cysts: These cysts contain a variable amount of bloody fluid, caused primarily perhaps, by a blow or series of bruises to the splenic substance.

2. Lymph cysts: This group of splenic cysts comprises those produced by an obstruction to the lymphatic circulatory mechanism. Some authors have denied existence of lymphatics with the spleen, based on microscopic study. The general consensus of opinion however, is contrary to this belief.

3. Peritoneal cysts: or those classified by Fowler as infoliation cysts, having enclosed peritoneal epithelium.

4. Neoplastic cysts: which includes those conditions explained on no other basis except that due to a structural or developmental malformation. This heading includes the very few dermoid cysts which have been described.

5. Parasitic cysts: caused by a bacteria or plasmodic invasion, including ingestion of typhoid, para-typhoid, malaria and echinococcus.

There is usually little cause for improper diagnosis in these cases. Occasionally thought of an omental or mesenteric cyst may deny a positive conclusion. The position of the cyst is more consistent, its location being in the left hypochondriac area. The size is of course variable. Anatomical relationships infrequently com-



plicate other tumors. Due to inadequate knowledge of the true function of the spleen, laboratory findings are of little consequence in diagnosis. It suffices to say that differentiation of the cyst from other tumors of the spleen is made simpler by ruling out the leukemias with proper blood analysis.

#### MESENTERIC CYSTS

The mesenteries may be divided into the following groups:

1. Mesentery proper.
2. Mesocaecal mesentery.
3. The ascending, transverse and descending mesocolons.
4. The sigmoid mesocolon.
5. The mesorectum.

The mesentery proper is that fold of peritoneum which connects the convolutions of the jejunum and ileum with the posterior wall of the abdomen. Its root is about six inches in length and directed obliquely from the left side of the second lumbar vertebrae to the right scaro-iliac symphysis.

The mesocaecum connects the caecum with the right ilac fossa.

The ascending mesocolon connects the back part of the ascending colon to the posterior abdominal wall. The descending mesocolon connects the back part of the descending colon to the posterior abdominal wall, while the transverse mesocolon connects the transverse colon to the posterior abdominal wall.

The sigmoid mesocolon connects the sigmoid flexure to the left iliac fossa. The mesorectum connects the upper part of the rectum to the front sacrum.

Obviously cysts of the mesentery may possibly arise from any part of the mesenteric folds of the peritoneum. Actually most of these cysts arise from the mesentery proper or the mesocaecum. Consequently the tumor mass is usually seen to the right side of the midline of the abdomen, extending from McBurney's point to the upper hypochondriac region. These cysts might be conveniently classified as follows:

1. Chylous cysts.
2. Traumatic cysts.
3. Cysts precipitated by chronic inflammation.

Of these the chylous cysts or the chylorrhorrhagic cysts predominate. These

cysts are large and usually singular. They may occur multilocular. They are intraperitoneal, usually contain clear fluid, They are composed of fibrous tissue and according to Klemm and Rittner should be classified as cystic lymph-angiomas.

The mesenteric cysts, due to trauma, usually follow a history of trauma to the abdomen, these cysts contain dark red fluid.

The mesenteric cysts, due to inflammation, occur after a chronic inflammatory process has existed for some time. They are filled with a sero-sanguineous fluid caused by constant friction within a slow forming cystic sac.

These patients usually come to the physician's attention not because of any tumor, but because of acute symptoms of pain or partial intestinal obstruction. Most frequently they are diagnosed as an acute or chronic appendicitis, due to their location and these acute symptoms. The enlargement is mistaken for peritonitis or some other form of inflammatory reaction and the physical findings are usually accompanied by elevation of temperature, leukocytosis and fast pulse.

Work done by Bartlett points to the fact that these cysts probably arise from the primitive sex organs, the Wolffian bodies.

#### OMENTAL CYSTS

The omenta are composed of the greater omentum, the lesser omentum and the gastro-splenic omentum.

The greater omentum consists of four anatomical layers: two of these arising from the stomach, one from the anterior margin, the other from the posterior border. These two layers descend after fusion, to the pelvis blanketing, as it were, the small intestines. The structure then turns upon itself and ascends to the transverse colon, which organ it encloses.

The lesser omentum extends between the transverse fissure of the liver to the lesser curvature of the stomach. It is extremely thin and consists of two peritoneal layers.

The gastro-splenic omentum is a fold of peritoneum which connects the concave surface of the spleen with the cul-de-sac of the stomach, it is continuous with the great omentum.

Most of the omental cysts arise within

the cavity of the greater omentum. They may be classified as follows:

1. Embryonic cysts.
2. Traumatic cysts.
3. Inflammatory cysts—the endothelioma of the two surfaces fusing because of chronic inflammation.

The embryonic cysts arise here under similar circumstances as mentioned in relation to other traumatic cysts, the original factor concerned being a hematoma.

The inflammatory cysts of the omentum are probably produced by friction between the endothelial surfaces of the omental sac producing or following inflammation.

Omental cysts vary in size from a small cyst to others of huge size. Their position is usually in the mid abdomen or in the right abdomen. One usually elicits the history that a large abdomen is natural for the patient. In most cases they come in following acute symptoms.

The following case history operated by the writer is of interest:

W. M., a male of German descent, aged seventeen years. A long distance call came from his sister in a neighboring town was to the effect that her brother had been taken with appendicitis. The local doctor insisted upon immediate surgery. We were informed that the patient would arrive at the hospital in about two hours.

The patient presented himself. Chief complaint was pain in the abdomen. The history was that he retired to his bed the evening before after having ingested a very large dinner. (His appetite had always been ravenous). Upon retiring he felt quite well, but was awakened about 4:00 a. m., with much pain in the abdomen. The pain localized over McBurney's point.

The family history is that the father died at the age of fifty with carcinoma of the bladder. A sister living, has congenital malformation of the entire spine, the vertebrae being of different sizes and shapes with a very marked scoliosis.

Physical examination showed a very well developed seventeen year old boy. The head, neck, nose, throat, eyes and ears all negative to external examination. The chest and heart revealed no pathology. The ab-

domen was large, the enlargement being perfectly uniform throughout. There was a dull precussion note throughout. There were no palpable masses, no shifting dullness or tumor mass perceived. The right rectus muscle was rigid from its origin to its insertion. The abdomen was considerably distended.

Pulse 100, respiration 28, temperature 38°C. White blood count 12,000, 82% polynuclear cells. Red blood count 4,500,000. Haemoglobin 90%. Urine negative.

While we were cognizant of the potentialities of a cystic tumor our inclination was to consider an inflammatory intra-abdominal condition with much suspicion toward the appendix.

The abdomen was opened by a long right rectus incision. There was considerable free, clear fluid in the peritoneal cavity.

The entire abdominal cavity was filled with a huge cyst, conservatively the size of a seven months pregnant uterus. This cyst completely blanketed the entire intra-abdominal viscera. The walls of the cyst were very thick and tenacious. There were no adhesions between the cystic wall and the parietal peritoneum of the abdominal wall. No strands of omentum were to be found. The cyst extended from the diaphragm above to the pelvic floor below. It was not connected with the bladder, gall-bladder, either kidney or ureter. It did not arise from the spleen nor the pancreas nor the liver. The posterior wall of the cyst was made up of the anterior surface of the loops of the small intestines and the colon. It was firmly attached to all of these underlying structures, its blood supply being also the blood supply of this viscera. It was soon sensed that complete extirpation of the cyst was impossible. The wall was sutured to the peritoneum as in colostomy, then the cyst was opened and 3200 c.c. of dark red fluid allowed to drain out, 800 c.c.'s of fluid escaped through the drainage tube in the next few hours. The post-operative course was uneventful. The sinus was kept open for six weeks but drained very little. At the end of this time it was allowed to close. So far as we can ascertain the cyst is not refilling.

This case was evidently an omental cyst, probably of embryonal origin.



# MALFORMATIONS OF THE UTERUS AND VAGINA—REPORT OF A CASE\*

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Mullerian Cords



Mullerian Ducts



Fusion Ducts



Normal Growth



Uterus Unicornis



Uterus Bicornis



Uterus With Septum



Double Uterus

In this discussion of the various malformations of the uterus and vagina a review of the points in development will help to clarify the way in which malformations are brought about. Malformations are errors in development. This may be simply an arrest in development or it may grow the wrong way.

The first structures indicative of the

genito-urinary organs to appear are the Wolffian ducts. These appear about the fifteenth day of fetal life, followed in about three days by the Wolffian bodies. One of each of these bodies and ducts lies on either side of the median line. During the fourth week another duct appears near the Wolffian body of each side. These are the Mullerian cords or ducts. These Mullerian ducts form the future fallopian tubes, uterus and vagina of the female or

\*Read before Muskogee County Medical Society  
1932.

the excretory ducts of the female. In the male the Wolffian ducts form the excretory ducts of the genital apparatus—the vas deferens and the epididymis. *The Mullerian ducts in the male become atrophic as do the Wolffian ducts in the female.* In the male the ends alone of the Mullerian ducts remain. The outer end forms the “hydatid of morgagni” closely connected with the epididymis and the inner end forms the “sinus pocularis” or “uterus masculinus” opening into the prostatic portion of the urethra. In the female the upper part of the Wolffian ducts remain as the “head tubule” of the parovarium—the lower portion is known as “Gartner’s duct.” They are atrophic structures of little importance.

A part of the Wolffian body forms the genital gland of that side i.e., the ovary in the female and the testis in the male. At the end of the fourth week genital ridges appear as outgrowths from the middle part of each Wolffian body. These are the earliest traces of the genital glands. There is some question as to the exact time that differentiation in sex can be determined. Usually between the fifth and sixth weeks a difference is noted. The primitive female gland possesses a large number of the primitive sexual cells with a predomination of the large primitive ova. In the male there is a formation of a net work of cell cords—the forerunner of the seminiferous tubules.

From the diagrams here shown the part played by the Mullerian ducts can be easily seen. The lower portions fuse and form the vagina and uterus and the upper parts remain separated to form the fallopian tubes. The lower end of the canal formed by this fusion is the future vagina and is closed. The fact that it is closed is seen later in the condition spoken of as imperforate hymen.

About the fifth month there is considerable thickening in the upper part of the canal—the growth of the uterus. At first the upper portion is bifurcated and forms the two horns between which the fundus is subsequently developed.

At the end of the third month the external sexual organs are characteristic beyond doubt. Up to the sixth week the external opening of the intestine and of the urinary apparatus are received within a common cloacal recess. The vestibule is formed from the cloaca or common opening of the two tracts. The perineum developing separates the rectum from the

common vestibule. The lower end of the Mullerian duct (hymen) breaks down, opening the vagina into this vestibule. This opening varies in size, shape and position giving the various forms of openings found in the hymen.

The common anomalies of development are as follows:

1. Failure of the septum between the embryonic vagina and sinus urogenitalis to break down results in imperforate hymen.
2. More rarely perfect canalization does not take place in the fused Mullerian cords, results in a closed place at some point in the canal-giving atresia of the vagina and atresia of the cervix. In rare instances all the lower end of the fused cord fails to canalize—causing absence of the vagina.
3. *Septum lacking between the urethra and vagina or hypospadias.*
4. Persistence of the septum causing double vagina and uterus septus.
5. Failure of fusion of the mid portion of the ducts causing each individual duct to form a uterus and vagina. Uterus didelphus or double uterus. Septate vagina.
6. Arrest of development of the upper end of one Mullerian duct resulting in a uterus with one horn. Uterus unicornis.
7. *Failure of development of the fundus. Uterus bicornis.*
8. *Hermaphrodite.*
9. Pseudohermaphrodite.
10. Rudimentary, fetal, infantile and puerile uteri.

The case I want to report is that of a 15 year old girl who was brought to the hospital suffering with recurrent attacks of pain in the right lower quadrant of the abdomen, and having one of the so-called attacks at the time of admission. She was a rather large girl for her age and had begun to menstruate six months previously with pain and discomfort in the lower right abdomen with each menstrual cycle. Menstrual flow of bright red blood but small in quantity and lasting about six days. No intermenstrual bleeding. Each succeeding period was worse than the preceding one and each caused a sense of fullness in the lower abdomen.

The present attack began forty-eight hours previously with pain in the right side—persistent, but without nausea or vomiting. Temperature 100, pulse 120,



white cells 9100 with 69% polys. Catheterized urine was negative. The physical findings showed a well developed and well nourished young female lying flat in bed but restless and complaining of distress in the right side of the abdomen. Skin and body fat normal. Breast development and distribution of hair normal. Menstruation present. The examination essentially negative except for the marked muscular rigidity and tenderness in the lower abdomen—more marked on the right side. With temperature 100, pulse 120 and the extreme tenderness and persistent pain in the right side a diagnosis of acute appendicitis was made and an immediate operation decided upon. No rectal or vaginal examination was done prior to operation. On opening the abdomen under ethylene anesthesia and through a right rectus incision much free blood and a few clots were encountered. The mass in the right side of the pelvis which was at first thought to be an ectopic pregnancy proved to be the right half of a bifid uterus with a distended right tube. This tube was emptying blood into the abdominal cavity. The other uterus was larger and the tube was not distended. The bodies of the two uteri were quite close together but the right side was removed without difficulty, doing a supravaginal hysterectomy on the smaller right uterus. At this stage a vaginal exploration was done. The anterior vaginal wall was boggy and resembled a cystocele. The vagina was extra long and in the upper portion was a small fistulous tract which led upward into that portion of the uterus which had been removed. There was a very imperfect cervix surrounding this opening. The boggy mass lying in front of the anterior wall was incised with the escape of a large amount of dark blood. The abdomen was closed after the removal of an appendix secondarily involved with organized blood clot. Further exploration revealed that within this second vagina there was a perfectly formed cervix. The incision was enlarged and the opening held open with a rubber tube sewed in place and the patient returned to bed. After an uneventful nine day convalescence a second operation was done. At this time the walls of the septum were separated and sutured and the upper ends sutured around the cervix. At discharge the wound had healed leaving a somewhat irregular vaginal wall but with no obstruction to the cervix attached to the left uterus and tube. The patient was seen once two months later, having had

two normal menstrual periods and the vaginal examination showed a perfectly satisfactory canal.

The diagnoses possible in this case then are as follows:

1. Double uterus.
2. Double vagina.
3. Hematocolpos.
4. Imperforate hymen, one vagina.
5. Hematometria—double.
6. Hematosalpinx—right.
7. Sub-acute appendicitis.

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#### POUCHES OF PHARYNX AND ESOPHAGUS

A. S. MacMillan, Boston (Journal A. M. A., March 19, 1932), reviews the literature on diverticula of the pharynx and esophagus, mentions their probable mode of development, calls attention to the frequency of their occurrence, discusses their diagnosis and differential diagnosis, and adds an additional twenty-three cases as studied in the Esophageal Clinic at the Massachusetts Eye and Ear Infirmary. In a careful examination of 1,000 cases of dysphagia he showed that pharyngeal pouches were the cause of about 2 per cent and esophageal pouches less than 1 per cent. On the basis of his observations he concludes that symptoms which are not always characterized, vary with the size. A roentgen examination is the only means of differentiating between pharyngeal pouches and other lesions of the upper end of the esophagus. Esophageal pouches are very commonly found at autopsy. Surgical removal of pharyngeal pouches by the two-stage operation has proven to be the safest and most satisfactory procedure. Surgical treatment of esophageal pouches presents the same difficulties encountered in all esophageal surgery.

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#### SENSITIZATION DERMATOSES OF NON-FUNGUS NATURE FOLLOWING SUPERFICIAL FUNGUS INFECTIONS ("RINGWORM") OF EXTREMITIES

According to Cleveland White and Samuel J. Taub, Chicago (Journal A.M.A., Feb. 13, 1932), superficial fungous infections (ringworm) of the extremities and elsewhere may be followed by secondary sensitization dermatoses of nonfungous nature. Such dermatoses may be confused with dermatophytid eruptions; future studies may show that some may be a part of a dermatophytid as at present conceived. Detailed individual study and properly performed sensitization skin tests usually will discover the offending substances. Four illustrative cases are cited; an insufficient number of cases has been studied to incriminate any specific organism or any particular class of proteins or substances.

# HODGKIN'S DISEASE—REPORT OF CASE\*

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White, male, age 31, Banker. August, 1929.

*Chief complaint:* Rightside paralysis, involving both right arm and leg.

*Family and past history,* negative.

*Present history:* Three weeks ago patient became unconscious for four or five days and became paralyzed in right arm and leg, at which time his doctor did a spinal puncture and found a 4 plus Wassermann. The blood Wassermann at that time was negative. Following this patient had six treatments of salvarsan and six mercury injections with improvement. Patient uses alcohol to excess and assigns no reason for this.

*Physical Examination:* Reflexes deep and superficial or exaggerated. Station is normal. Babinski, Chaddock, Rhomberg, Oppenheim, and Gordon signs are all negative. No ankle or patella clonus. Slight speech defect. Slight tremor of extended fingers. Pupils are regular and react to light accommodation. No generalized adenopathy. Heart normal. Blood 116-80. Lungs normal. Abdomen, liver and spleen not palpable. Reflexes at knee; right, hyper-active; left normal: Blood Wassermann negative. Spinal fluid shows globulin and mastic negative with 10 cells per cubic centimeter. Wassermann 1 plus. Urine negative. Temperature, pulse and respiration normal.

*Diagnosis.* CNS lues.

JULY, 1931

*Complaint:* Swelling of glands of neck and sore throat, nervousness.

*Examination:* Temperature 102.6, pulse 136, respiration 28, weight 109, usual weight 136; height 5 feet 6 inches. Examination is same as before except for the following: Shows a discrete enlargement of the glands of the left sub-maxillary and cervical regions. No axillary or inguinal enlargement. Chest normal to physical examination and X-ray. Reflexes: eyes are normal. Rhomberg positive. Blood Wassermann negative. WBC 14,200. Poly

82%. Small mononuclear 10%, large mononuclear coagulation times three and one-half minutes. RBC 3,470,000. Hgbn. 55%, color index 80. There is poly and anisocytosis. Urine and sputum normal. Biopsy on the cervical glands showed Hodgkin's disease. Patient was then given a course of X-ray treatments which resulted in disappearance of the adenopathy.

DECEMBER, 1931

Glands of the neck and sub-maxillary are not palpable. Temperature normal. Lungs and heart normal. Abdomen: Liver is three finger-breadths below the costal margin and is tender; spleen not palpable. Blood Wassermann is negative. The R.B.C. are 2,980,000. W.B.C. 6,800. The poly count is 20%. Hgbn. ks. 45%, color index is 77. There is considerable polychromophilia and poikilo and anisocytosis present. Skin shows considerable lichenification.

*Diagnosis:* Cirrhosis of the liver. Hodgkin's disease. C.N.S. lues.

JANUARY, 1932

Temperature: 97. Pulse 108. Respiration 22. Head, neck and chest are normal. Abdomen greatly distended and tympanitic, right side of abdomen is tender and resistant, down to the umbilicus area. Abdomen is too tense to feel liver or spleen. No adenopathy. Urine and sputum negative.

*Autopsy:* February 3, 1932, shows ascites of the abdomen, pericardial effusion, bilateral pleuritic effusion, fatty degeneration of liver and areas of Hodgkin's disease in liver, spleen, prostate, kidney, lung and retro-peritoneal glands.

DISCUSSION

Hodgkin's disease is variously called lympho granulomatosis, pseudoleukemia, lymphosarcoma (Virchow's), malignant lymphoma (Billroth), splenic anemia (Strumpell), chronic relapsing fever (Epstein, multiple myelomata (Rusticky), lymph adenoma (Wunderlich), and anemia lymphatica (Wilks). All the terms go to show the confusion encountered in

\*Read before the Muskogee County Medical Society, March 8, 1932.



arriving at its classification. This confusion is justified, for the disease has characteristics which all the foregoing terminology seeks to express, and in fact is the battle ground of whether Hodgkin's disease is an infection or a malignancy.

It was in 1832, just one century ago, that Hodgkin first described the disease so well that it has since born his name. It is characterized by a dyscrasia of the blood which we call progressive secondary anemia, as well as an adenopathy, and little or no leucocytosis, while clinically there is in most cases, a somewhat characteristic temperature curve of the Pel-Ebstein type, in which the febrile period lasts about a week, followed by an apyrexia of ten days to two weeks.

Sternberg in 1898 stated that the disease was a special glandular form of tuberculosis, on the strength of clinically finding the two quite often associated. But four years later Dorothy Reed (John Hopkins) and Longscope at the University of Pennsylvania Hospital both showed that tuberculosis and Hodgkin's were separate affections.

Froaenkel and Much in 1910 found an organism greatly resembling the tubercular bacillus in 12 of 13 Hodgkin cases. These patients were clinically and anatomically free of tuberculosis. The organism was found to differ from the tubercle bacillus in not being acid fast. In 1913 the observations were confirmed by Negri and Miermet, who stated the organism was very similar to the tubercle bacillus, but in reality was a diphtheroid. In the same year Bunting and Yates again confirmed these findings and conclusions.

Billings and Rosenau in the same year reproduced Hodgkin's disease in monkeys by inoculation of this organism, and the typical proliferation of the endothelial cells, stroma, giant cells and eosinophilia and plasma cells in the lymph nodes. Nevertheless Oliver contends the malady is a neoplastic one, because of its similarity in histological appearance, its occasional invasion of capsule and veins and ultimate true metastases, and further states that diphtheroid organisms have been found in many other conditions and even in normal lymph nodes.

Physical examination at first discloses little. The sub-maxillary group of glands are most frequently found to be discretely and painlessly enlarged, then usually from these a general adenopathy develops. Any group of glands however, may be the

starting point. As variable periods of weeks, months or years go by, there comes malaise, anemia, cachexia and fever of 100 to 103, which may be intermittent, remissive, but usually recurrent in type. This latter form has gathered the name of Pel-Ebstein pyrexia.

At any time during the course cutaneous signs may be present, including urticaria, petechiae, papular-prurigo-exanthemata, edema or bronze pigmentation.

The liver and spleen often are moderately and painlessly enlarged from metastatic areas and local symptoms in any part of the body may develop from pressure of the enlarged glands on structures as arteries, nerves, veins or various organs.

The blood shows nothing characteristic, except it is consistently of progressive secondary anemia type. Lymphocytes may be relatively increased but never has a transformation to a leukemia been recorded. In cases showing pronounced skin irritation, an eosinophilia may be present, but the blood remains true to the secondary group.

Only by a biopsy can the disease be diagnosed. This shows typical findings in the appearance and arrangement of the fibrosis, lymphocytes, giant cells, endothelial, plasma and occasionally esinophilic cells.

However the disease may be suspected by the painless, discrete, progressive adenopathy and absence of leukemic changes in the blood.

Lymphosarcomas, tubercular glands, syphilis, secondary infections invading glands, trauma, to regional glands, and metastases of malignancy to lymph glands all have to be considered, and ruled out in considering Hodgkin's disease, but the biopsy takes care of the doubt in each instance. The size nor resistance of the palpable glands cannot be relied upon, for these factors vary with the pathological stage of the disease.

Death usually occurs under two years, though some go as long as five years, while others close the process in death during a few weeks or months.

Treatment is to no permanent end, and X-ray, arsphenamines, elimination of foci, diets and drugs only add to the peace of the encumbered during his spiritual metamorphosis, as he embraces another world.

# GLOSSOPHARYNGEAL NEURALGIA WITH A CASE REPORT

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BENJ. W. WARD, M.D.

TULSA

A rather exhaustive survey of the literature in English of this condition revealed previous reports on it totalling only thirty-six cases. Based on this alone one might be led to the conclusion that the condition is an extremely rare one but careful study of these reports warrants the belief that many cases have been unrecognized and it is no doubt also true that numerous cases have not been reported.

No disease or, rather, pain syndrome illustrates more beautifully the fact that even so-called modern medicine is in a constant state of evolution. With the knowledge of anatomy upon which we have prided ourselves for many years it seems scarcely conceivable that the definite entity of idiopathic glossopharyngeal neuralgia should have failed of recognition until Sicard and Robineau<sup>1</sup> in 1920, reported three cases and even then, they believed that the vagus and superior cervical sympathetic nerves were involved. However, the condition being a rare one and the entity of trigeminal neuralgia being so firmly entrenched in the medical mind following Fothergill's<sup>2</sup> classic description of it, we can scarcely wonder that the pain of glossopharyngeal neuralgia was thought to be an atypical expression of trigeminal "tic douloureux." Weisenburg<sup>3</sup> in 1910, had really opened the way for the recognition of the condition when he described in detail the symptoms of irritation of the ninth nerve. It is not our purpose, however, to enter upon a detailed historical study as Adson,<sup>4</sup> Dandy,<sup>5</sup> Stookey<sup>6</sup> and others have done that admirably. These writers have also described and discussed the anatomy and embryology<sup>7</sup> of the nerve exhaustively.

The etiology of this neuralgia remains a matter for conjecture as does that of trigeminal neuralgia. Focal infections of the teeth, tonsils, ears, mastoids and sinuses have been regarded as causative. Unfortunately, while some cases have apparently improved after removal of infected tonsils, etc., recurrence has been the uni-

versal rule so that the role played by focal infection has not been properly evaluated.

Analysis of the reported cases discloses these facts: Twenty-eight cases seemed to be idiopathic in origin as no general or special examination accounted for their causation. Of these, eight revealed at operation no intracranial pathology to explain the symptoms. There were five cases in which the tongue, pharynx, or larynx were involved by carcinomata. In one case (Weisenburg's) a brain tumor of the cerebellopontine angle, stretching the ninth and tenth nerves and compressing the fifth was found. Two cases were doubtful in that one had repeated convulsions and died two years after onset of symptoms and the second lost weight rapidly and became cachectic before death. Unfortunately autopsy was not obtained in either case. Adding our own case which is apparently idiopathic, there are 29 of no known etiology and six of proven etiology. Omitting the two doubtful cases, we find 20% occasioned by tumor growths either in the region supplied by the nerve or intracranially.

Of the total number of cases, (including our own, a female) there were thirteen females and twenty-four males afflicted. This might be explained on the basis of greater frequency of mouth and throat malignancy in men—four of the five cases with this etiology being men and one a woman. However, considering only the idiopathic cases we have twelve female cases compared with twenty male. This series is, of course, entirely too small to permit of any conclusion being drawn beyond a statement that there seems to be a greater tendency toward development of the syndrome by men.

Glancing at the age in the thirty-one cases in which it was recorded (our's included) the preponderance occur between fifty and seventy years, there being nineteen during this period as compared with



eleven cases between twenty and fifty years and three after seventy years.

The symptomatology is very exact and definite and the diagnosis can be based accurately upon it alone. The pain is paroxysmal, its character is variously described as lancinating, stabbing, shooting, like thrusts of a hot iron, etc., just as in trigeminal neuralgia. The *duration* varies from a second or fraction thereof, to nearly a minute, very rarely longer. The *distribution* is pathognomonic in that always some part of the glossopharyngeal sensory area is struck—as the tonsil, root of the tongue or pharynx—occasionally the ear lobule. Radiation occurs most frequently into the ear, down into the neck, at times to the angle or back of the mandible or external auditory meatus. We must at times interpret some of the radiation as an “overflow” or reference of the painful sensation to other nerves. The *exciting causes* are distinctive. Swallowing, particularly of liquids, talking, chewing, or yawning are given most frequently as the immediate cause of pain. At times coughing, sneezing, excitement, muscular exertion, touching or washing the ear has induced pain and often it is apparently spontaneous. In many cases a “trigger zone” can be identified, stimulation of which produces pain and this has most frequently been in the tonsillar region, base of the tongue, or on the pharyngeal wall. Conversely, cocainization of this “zone” will stop the attacks of pain temporarily.

Diagnosis can usually be made from an intelligent account of the symptoms alone. The exact similarity to the spasm of pain in trigeminal “tic douloureux” *except for location*, the distribution and radiation and the exciting causes establish the diagnosis and this, of course, is clinched when a typical “trigger area” can be found. There should be no difficulty in differentiating it from trigeminal neuralgia on the basis of distribution, exciting causes, and “trigger zones” if present. If possible the pain is more severe than that of trigeminal neuralgia but usually of shorter duration. Like ectopic pregnancy it can be diagnosed easily if it is kept in mind. Unfortunately text books contain little or no reference to the syndrome so that until recently its very possibility was generally unknown, and is still to a great extent, in general medicine.

A word of warning might be timely with reference to atypical and bizarre types of discomfort or pain along the distribution

of the glossopharyngeal nerve. It is being recognized more clearly with the passage of time that all pains in the trigeminal area are not true “tic douloureux.” Unfortunately, many cases have had alcohol injections, avulsions, and posterior root sections of the trigeminus with no relief and the superimposition of the disability occasioned by destruction of the trigeminus sensory function. Atypical pains are now recognized in many instances as migrainous in origin and we have realized that radical procedures are justifiable only when a clear cut picture is presented. Parker<sup>7</sup> and others have called attention to this so we should be eager and able to avoid useless operations on the glossopharyngeal nerve by demanding a definitely recognized syndrome before undertaking surgery. While the removal of focal infections has not been attended by success in relieving the condition, as a matter of good practice such infections should receive proper attention. However, the patient should be made to understand that in all probability no relief from the neuralgia will be obtained, only a better safeguarding of general health secured. The longest remission occurring in any case reported was three and three-fourths years (one of Adson's cases). Some cases have had immediate relief following tonsillectomy, etc., but there was always recurrence of pain in the course of time.

Surgical treatment, however, is most satisfactory and, in skilled hands, comparatively free from danger. Just as in the treatment of trigeminal neuralgia, intracranial section has proved the most satisfactory from the standpoint of permanent relief and freedom from complications and untoward results. Treatment evolved for ninth nerve neuralgia, much as for that of the fifth nerve, from the original peripheral avulsion of the glossopharyngeal, pharyngeal branches of the vagus, and superior cervical sympathetic nerves as practiced by Sicard and Robinseau through the principles of intracranial section evolved on the cadaver by Adson and Fay<sup>8</sup> to the actual practicing and development of intracranial section through a suboccipital approach of Dandy, Stookey and others. Their papers give detailed accounts of their method of intracranial section. Apparently only one man, Harris, dared attempt alcoholic injection, and he was unsuccessful. The anatomical relations of the nerve make any attempt at its injection chimerical. Dandy<sup>9</sup>, Stookey<sup>9</sup>,

Bailey<sup>9</sup> and Reichert<sup>10</sup> have reported eight cases effectually relieved by intracranial section with no mortality.

Following operation the result is much more satisfactory than that of section of the sensory root of the trigeminus in that while the pain is completely relieved the loss of sensation is limited to areas in which it is not noted nearly as markedly is in those areas supplied by the fifth. The motor impairment is negligible. Dandy and Stookey have carefully tested the changes in a motor, sensory, secretory, and taste sense way and while they are not in exact agreement they have established the following facts:

*Motor Changes:* Limited to a slight difficulty in swallowing solid food for a few days after section, soon disappearing. No deviation of pharyngeal wall; lowering of palatal arch on side of operation as seen by sagging while at rest but voluntary elevation of the arch remains equal on both sides.

*Sensory Changes:* Complete anesthesia in the region of the eustachian tube, nasopharynx, soft palate, uvula, tonsillar pillars, and base of tongue; on dorsal wall of pharynx certainly as far as epiglottis and on anterior wall also—these changes extending to the mid line. There was no sensory loss of the external ear in the cases tested.

*Secretory:* No disturbance of salivary secretion.

*Taste:* Loss of this sense over the posterior one-third of the tongue on the affected side.

#### CASE REPORT

In June of 1930, Mrs. L. P. of Tulsa, aged 76, white, able to actively manage her household affairs began to suffer from a peculiar type of pain in the region of her right tonsil and base of the tongue. The pain was paroxysmal and lancinating in type. The patient described the sensation as that of having the right base of the tongue "twisted out violently." Pain radiated into the right ear, the patient distinctly feeling it spread from the throat outward into the ear; it radiated at times down into the right side of the neck. The paroxysms lasted from one second to four or five seconds and varied in frequency from twenty or more per hour to just a few during a twenty-four hour period. Pain was occasioned by swallowing—particularly liquids and more especially acid foods like tomatoes—by talking, at times by chewing, and, she believed, by chilling of her body, particularly the region of the right ear. Because of the pains she refused to eat except very sparingly and lived in constant dread of them. A physician examined her carefully and thoroughly at that time and interpreted the attacks as trigeminal "tic douloureux." The blood pressure was

elevated, being 180-100 and a history of chronic cholecystitis was elicited, otherwise the patient seemed in excellent physical condition for her years. An otolaryngologist was consulted who found an old catarrhal condition of the right middle ear and agreed with the diagnosis of trigeminal neuralgia.

Conservative treatment was instituted although the medical attendant felt that alcoholic injection or posterior sensory root resection of the trigeminus might eventually be necessary. A remission occurred about July 21, 1930, and lasted until the early part of September of the same year. At this time we saw her after receiving previously an accurate account of her former seizure. In all justice it must be admitted that the opportunity to analyze the symptoms before seeing the patient counted heavily in our favor as the unusual distribution of the pain was apparent from the history and we were not led astray by first seeing the patient during an attack when all the symptoms—except distribution—of a true "tic douloureux" were present. For this reason the location of the pain received its proper evaluation and we were at once suspicious. However, at that time we had read no accounts of glossopharyngeal neuralgia and a search of various text-books was not enlightening. Based on a careful study of the anatomy of the glossopharyngeal nerve we were forced to the conclusion that the pain must be occasioned by a neuralgia of it rather than the trigeminus. The otolaryngologist was again consulted and found the ear condition practically normal and no findings in the mouth, nose, pharynx or larynx accounting for the pain. A search of current literature convinced us by mid-October that the diagnosis of glossopharyngeal neuralgia was correct.

At the time of our first examination blood pressure findings were normal and careful physical examination revealed evidence of chronic cholecystitis only. Since the patient and her relatives would not consider surgery, painful seizures were rendered more bearable by the administration of codeine and other anodynes. In late October of 1930, the patient had recurrent attacks of abdominal cramps lasting for some hours and terminating after several loose, foul-smelling stools. Gastric anacidity resulting from long standing gall-bladder disease we felt to be the cause of these attacks and since the glossopharyngeal neuralgia precluded our getting permission to examine the gastric contents, hydrochloric acid was given "on suspicion" and a prompt and gratifying improvement occurred. The glossopharyngeal "tic douloureux" which had persisted with short remissions and exacerbations until this time now ceased and to this date has not recurred. However, in view of similar remission in other reported cases—one for three and three-fourths years—we expect momentarily a recurrence. There was no "trigger zone" that we could determine and cocaineization of the anterior pillar, tonsil, and right base of the tongue gave no relief.

#### SUMMARY

Survey of the available literature revealed thirty-six reported cases of glossopharyngeal neuralgia, which we feel does not indicate the true frequency of the syndrome. Present statistics indicate an incidence of about twenty percent of tumor formation responsible for the neu-



ralgia, remainder being idiopathic. The role of focal infection is uncertain. There seems to be a greater tendency for males to develop the condition and most cases occur during the fifth to seventh decades.

Symptomatology is characteristic and diagnostic; differential diagnosis should be easy if the possibility of glossopharyngeal "tic douloureux" is known and kept in mind. A note of warning should be sounded with regard to mistaking migrainous or other atypical pains in this area for a true glossopharyngeal neuralgia.

The removal of focal infection, while indicated as a good medical principle, should not be held out as a hope of cure. Intracranial section is, undoubtedly, the only method of values and results from its use have been 100% satisfactory. The resulting sensory disturbance is far less objectionable than that following posterior root section or injection of the trigeminus. Dandy and Stookey have described the sensory, motor, and taste sense changes following operation in detail.

A case apparently of idiopathic origin in an elderly white female is reported who has enjoyed a remission of symptoms since October, 1930.

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## THE RELATION OF OBSTETRICS AND PEDIATRICS TO DENTISTRY

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There is an old adage which states "for every child a tooth," and even today is not without foundation. With our present knowledge of dental hygiene it should be an idea of the past. If there is ever a time in a woman's life that she needs dental care it is during pregnancy. A pregnant woman assimilates an unusual amount of calcium, and if it is not supplied to her through proper diet, there results a partial decalcification of the bones and the teeth.

The examination of the teeth during pregnancy is one that is usually neglected. I am informed by the dentists that it is the exception rather than the rule for prenatal cases to be referred to them. In a report to the White House Conference, Polak<sup>1</sup> states that only in a very few prenatal clinics is there any dental hygiene prac-

ticed or taught, and that most supervision comes from physicians without proper consultation with the dentist.

Apparently there is a phobia that exists among the laity, that any dentistry, except the most minor, is dangerous during the prenatal period. It requires a good deal of effort on the part of the physician, as well as the dentist, to get these patients to have any operative procedures. The idea can only be corrected through the co-operation of the physician and the dentist. We know that only those operations which require prolonged anesthesia are contraindicated. Ordinary extractions should be done. Occasionally during pregnancy we see women who complain of neuralgia pains, extractions are sometimes done for their relief, and often without results.

Radiograph is always indicated when this symptom exists.

There are some physicians, as well as dentists, who believe that the filling of carious teeth should be temporary during the prenatal period. I have never been able to see the logic in this, certainly there is very little difference in the pain involved, and the time consumed, in the preparation of a cavity for a temporary and a permanent filling. Often times these patients neglect to return.

It is obvious that foci of the gums and the teeth should be properly treated. They are certainly a potential danger during pregnancy. Focal infections are a continual source of toxins and maybe the origin of some toxemias.

It used to be taught that a clean tooth never decayed, but most investigators now believe that vitamin deficiency has marked influence on caries, and that all vitamins must be present for their prevention. As yet we do not know the quantity requirements of vitamins for the individual, nor do we know just how much is supplied to the fetus by the gravida. Bloch<sup>2</sup> has recently shown that deficiency in vitamin A causes no specific injury in formation and calcification of the teeth, and the same may apply to vitamin B and C. Nevertheless, it is important that a woman be instructed about her diet during pregnancy. Such a diet must supply sufficient minerals, and of course would supply sufficient vitamins for the development of bones and teeth. The best source of calcium is milk or skimmed milk products. The chief vegetables from which it is obtained are, beans, peas, spinach, cauliflower, with the addition of fruits, meats, eggs and cod liver oil it is obvious that the patient is well supplied with vitamins.

There should be close co-operation between the physician and dentist if the patient during pregnancy is to receive the proper dental attention. The physician sees the patient first, it is his duty for the welfare of his patient that he insists on the proper dental care. The instruction for the patient as to hygiene of the teeth should always be left to the dentist, for very few physicians have any knowledge of such care. Marshall<sup>3</sup> in an article on dental dysfunction inquires as to whether the dentist is in position to recommend to his patients certain changes in their diet and to explain the necessity for these changes, and whether he is in a position

to prescribe dietary regimen. He further notes that it is difficult in some cases to indicate a dividing line between the practice of medicine and dentistry. I do not believe that the dentist should prescribe any changes in the diet during pregnancy. There are often many changes that take place in the metabolism of these patients which the physician must observe and correct and for which recommendation or choice of food could not be carried out by the dentist.

Any physician who practices pediatrics should be able to inform parents about their children's teeth. The common opinion among the laity is that the temporary teeth require no special care, and regardless of their condition they will be followed by normal permanent teeth. Due to the efforts of the dental profession the teachers in our public schools are making some progress in having the children practice dental hygiene. The education of the children, of course, has some influence on the parents, and I believe that they are showing more interest in the care of their children's teeth.

We know that it is very important for temporary teeth to remain for their normal time in order to prevent anomalies of the jaw. According to Scheidt<sup>4</sup>, the act of mastication through pressure of milk teeth stimulates the development of permanent dentition and the growth tendency. He further notes that promotion of growth of jaw has favorable influence on spacing of the permanent teeth as well as preserving the proper height of teeth, also the permanent loss of temporary molars has considerable effect on entire permanent arrangement of teeth of the upper and lower jaw. Especially is this true of first permanent molars.

There is a great temptation to have the deciduous teeth which are carious, often to the point where they just protrude beyond the gum margin, extracted. This should never be done unless there is some indication that they are becoming injurious to the child's health, or until complete resorption of the roots take place. The premature removal of these teeth will result in the disarrangement of the permanent teeth.

Mouth breathing, lip and thumb sucking very often result in malformation of the jaw and teeth. Parents should be strongly advised as to the danger of such habits. Children who have malocclusions



and malformation of the teeth should be placed under the care of the dentist. So often such conditions are treated lightly by the physician who could, with a little time and advice to the parents together with the co-operation of the dentist, prevent permanent deformities to the child.

The most common conditions which are seen in the teeth of children are caries. Mellamby<sup>5</sup> in a series of experimental diets has shown that diets high in vitamin D inhibits caries and increases the hardness of the dentine and controls the structure. He has further shown that the addition of fat-soluble vitamins adds to the value of vitamin D. There is considerable controversy about the aid of the other vitamins, excepting vitamin D as to the place they have in preventing caries and calcification. In the queries of minor notes A. M. A., there is a statement that cod liver oil is concerned largely with the development of unerupted teeth and calcification of the bones. Bloch states that vitamin A is not necessary in the prevention of caries. The part played by the vitamins in the development of the teeth is not clear as yet.

There remains considerable work to be done before we properly place their usefulness in dentition. However, we do know that a properly balanced diet is essential to the welfare of the individual and in such a diet, reenforced with vitamin D we should secure sufficient of the other vitamins regardless of their place in dentition. Certainly the dentist and the physician should co-operate in the diet of the child when there is evidence that faulty diet is injurious to the teeth. Such advice is often not well taken by the parents or the physician. I believe that the dentist of today is often better informed as to proper diet necessary for development of the teeth than most physicians. The physician should realize that his problems often are the dentists, and that they are working to a common end, the welfare of the patient.

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## FOCAL INFECTION FROM A DENTAL STANDPOINT\*

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Focal infection viewed from a dental standpoint should be, and is the same as the view of the medical profession, except as we dentists are circumscribed by our particular field of operation. As far as our knowledge, our interests and the welfare of our patients are concerned, there are no chasms or bridges to cross between dental and general pathology.

Benjamin Rush, an M.D. (1818) and W. D. Miller, a dentist (1891) were among the first of their respective professions to note and give serious consideration to influences and relations of oral to systemic diseases.

As I understand it, focal infection means an invasion from a focus resulting

in systemic infection—a focus of infection is a circumscribed area of tissue infected with pathogenic micro-organisms. Metastatic systemic disease being due to the fact that the organisms are carried from the focus by the blood or lymph stream to the points of localization where they multiply and excite an infection of the tissues in which they are lodged. The late text and our current literature are filled with this subject of focal infection, and I will only attempt to mention a few points relative to the dental field.

It is not necessary to name a long list of investigators and their findings, for generally speaking, they all agree on the entire theoreum of focal infection. But I just want to call your attention to some of the conditions, including structural and

\*Read before a joint meeting of the Muskogee County Medical and Muskogee County Dental Societies, February 17th, 1932.

anatomical that are common to our field and by the very nature of the area from a histological and anatomical standpoint make of it a most favorable place to produce foci of infection.

In consideration of oral disease we must remember that we are dealing with unique types of tissue and their relations, such as are not found in other parts of the body. The encapsulated pulp with its delicate nerve and blood supply, the superior and inferior maxillae with their dense outer surfaces and highly cancellous inner body, liberal blood supply, proximity of the maxillary sinus, fibrous gum tissues, etc. For convenience let us classify into intra-osseous and extra-osseous. In our first classification we find the carious tooth with its pulp involvement, the pulpless or devitalized tooth, the apical abscess, granulomata, osteitis and sinusitis; second class would include, pathology of the gum tissue, gingivae, superficial periodontal membrane, pyorrhea pockets, the partial and unerupted third molars.

Streptococci and staphylococci bacilli, such as produce a long list of systemic disturbances, according to many of our investigators, are produced in the above mentioned areas within the mouth tissues.

I am inclined to think that few of us look upon the carious tooth with any great degree of suspicion as a focus of infection, yet when we remember the dental fibrilla which are truly a part of the tooth circulation and that they extend from the pulp center through the dentine to the enamel, why should it not take equal place with the pulpless tooth as a menace to the health of our patients?

Henrici and Hartzell have found forty-two to forty-five per cent of pulps in carious and pyorrhea teeth were infected although pulps had not been entirely exposed by any lesion.

The pulpless or devitalized tooth in my judgment, is not entitled to much consideration because in most any event a very large percent of them produce periapical infections. Suffice it to say that devitalization may be caused by caries, surgical interference, erosion, abrasion, periodontal infection and trauma. We find many devitalized from this last named cause, of which the patient is unconscious.

The apical abscess with or without granuloma possibly holds first place in the dental area as foci of infection for several reasons: first, anatomical, being completely confined within the body structures, ab-

sorption into the blood stream is about the only way of escape. Second, number of organic disturbances directly traceable to their strain of bacilli. Third, their prevalence. Fourth, readily located by aid of radiogram.

The maxillary sinus often becomes involved and even a part of an apical alveolar abscess, either by reason of the close proximity or actual projection through the antrum floor by the apices of the teeth producing a sinusitis. Any tooth in the upper arch from cuspid to third molar might be the cause of such antrum involvement.

In our second classification we have the gum tissue and covering of the alveolus, the gingivae and periodontal membrane with much fibrous tissue dependent almost entirely on a peripheral arterial and nerve supply making this field a very favorable place under pathologic conditions to either be the producer or the recipient of toxins from other parts of the body, but I desire to call your particular attention to the deep alveolar abscess, the partially erupted third molar and the impacted third molar.

Pyorrhea alveolaris is a disease characterized by inflammatory and degenerative changes in the tissue immediately surrounding the teeth which progresses until the periodontal membrane, the alveolus and even the pulp are involved. The causative factors are many. They may be local or the result of a general systemic condition. And while we look upon any broken down inflamed area as a possible focus of infection, it is the deep pyorrhea pocket from which we possibly get the greater manifestations of toxic absorption and in which many investigators have found streptococci and staphylococci bacteria.

I mention especially the third molar area because there are few mouths, where these molars have been retained, that will not present some type of involvement, either pathologic or anatomically abnormal. The crowded condition often causing almost constant laceration of the epithelia of the cheek, with a possible prognosis of malignancy. The partially erupted, impacted and incarcerated teeth wherever located, furnish most favorable points for irritation and foci of infection. I am sure the specialist realizes the full import of these last mentioned offenders and he will no doubt enlarge upon the results of their affections. Many of these conditions are



not known to the patient and are not observed by the casual examiner. In the course of an investigation by McCoy, one hundred and twenty-five cases were radiographed and in each there was found some unexpected pathologic condition, such as impacted and incarcerated teeth, incomplete root canal fillings, foci of chronic infections, pyorrhea pockets, etc.

More than fifty per cent of the cases with chronic foci of infection had systemic manifestations.

In conclusion I wish to say with reference to the devitalized tooth that there may be an occasional condition existing wherein we are justified in attempting to preserve one of these chief offenders if the patient is in perfect health and understands the risk taken, but when I see a pulpless tooth or a pyorrhea pocket that involves the cancellous alveolus, I think of a barracks inhabited by an invading army, and in my judgment they should be eliminated

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## SOME DISEASES AND CONDITIONS MOST FREQUENTLY MISTAKEN for PULMONARY TUBERCULOSIS

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R. L. HICKMAN, M.D.

Western Oklahoma State Tuberculosis Sanatorium

CLINTON

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Having been engaged in tuberculosis work for a number of years we are convinced that there must, at least at times, be considerable confusion in the average practitioner's mind on many cases about a differential diagnosis of pulmonary tuberculosis. It is a sad fact that most of the patients admitted to the Western Oklahoma State Tuberculosis Sanatorium with proven tuberculosis are in the far advanced class. This classification being made according to the National Tuberculosis Association, and adopted by the Diagnostic Standards Committee of the year 1929, as follows.

(a) A lesion of slight disseminated infiltration or fibrosis extending through more than the equivalent of the volume of one lung.

(b) Severe infiltration, with or without fibrosis, which may extend through not more than the equivalent of one-third of the volume of one lung.

(c) Total diameter of cavities when present must exceed 4 centimeters. In the far advanced conditions one may have slight or no symptoms, such as loss of weight, tachycardia, fever and intestinal disturbances.

From March 1st, 1931, to September 1st, 1931, a total of 219 patients were ad-

mitted to the sanatorium. Of this number 112 or 51% were far advanced (or 66.6% of the proven tuberculous), 43 or 19% were moderately advanced, and 13 or 6% were minimal and we found after a sufficient period of observation 51 or 24% were non tuberculous. In this classification of non tuberculous all cases of childhood type of tuberculosis, admitted since July 1st, when the children's department was opened, are included. Most of them reacted to tuberculin, (Mantoux, or intracutaneous method). Contact and childhood type account for 15 cases.

Undiagnosed 17 cases. Under this heading is included many who were sent to the institution due to the much talked of depression, and probably had no organic disease. In some instances domestic relationships had something to do with the admission. The diseases in which a mistaken diagnosis had evidently been made, in the order of their frequency are, as follows:

1. Cardiac conditions, 8.
2. Bronchiectasis, 4.
3. Psychoses, 2.
4. Hyperthyroidism, 2. Proven by basal metabolic rate.
5. Sarcoma, 1. Proven at autopsy.

6. Post pneumonic empyema, 1. cured by rib re-section.
7. Foci of infection, 1. (Bad teeth improved and gained weight after oral attention).

Hyperthyroidism will not be discussed here other than to say that we do not encounter thyrotoxicosis as commonly in Oklahoma as it is found in the Great Lakes region for example. Occasionally we get a patient with a B.M.R. of plus 20 or plus 30; but it must be borne in mind that any febrile condition the metabolic date is increased.

The minimal requirements for a diagnosis of pulmonary tuberculosis according to the National Tuberculosis Association and the United States Veteran's Bureau are based on Dr. Lawrason Brown's five cardinal signs, of which two must be present: (1) Hemoptysis of a drachm or more—not merely streaked sputum. (2) Pleurisy with effusion. (3) Moderately coarse rales (above the third rib anteriorly and the third vertebral spine posteriorly) that persist after cough. (4) Parenchymatous lesions by X-ray in the same area; and (5) the presence of tubercle bacilli in the sputum.

The most reliable physical finding is the moderately coarse rale, persistent after cough, in the upper third of the lung.

It is very easy to understand how cardiac conditions can be and are confused with tuberculosis, especially with the presence of cough, hemoptysis, dyspnoea, precordial pains, flushed face, tachycardia, ease of fatigue and very commonly gastrointestinal disturbances. Many cardiacs are emaciated and at times have slight fever.

Several years ago Pottenger said: "Hemoptysis is more valuable in the diagnosis of pulmonary tuberculosis than the Wassermann in syphilis." All cases of hemoptysis are considered as tuberculous until proven otherwise, but frequently the proof is readily ascertained. Richard Cabot states that of 3444 cases of hemoptysis in the Massachusetts General Hospital 1177 or 34% were due to mitral disease.

In mitral disease there is commonly a history of tonsillitis, chorea or acute rheumatic fever. Examination may reveal an enlarged area of cardiac dullness, downward or outward. The apex beat, if visible will or maybe outside of the midclavicular line and is frequently diffuse. With mitral stenosis a thrill is often palpable. Almost invariably a murmur is present over the mitral area, and is not transmitted.

A frequent confusing point is the presence of rales which are due to stasis. They are bilateral and basal, a very uncommon occurrence in pulmonary tuberculosis. X-ray examination may reveal a hazy clouding of the area but no characteristic mottled appearance of tuberculosis.

For many years a small heart has been considered to be a causative, or at least associated, condition of pulmonary tuberculosis. In most cases of tuberculosis there is a decrease in size of the heart with a decreased blood pressure. The normal and the small hearts of the tuberculous have a convexity along the left border in the auricular region. In mitral disease the heart is usually increased in size and there is a pronounced convexity or "mitral bow" along the left border. Heart films should be made at a distance of two meters or about six feet. The greatest horizontal diameter of the heart should not exceed 40% of the internal chest diameter; this depends somewhat on the body build of the individual.

A very important point that must be mentioned is that mitral disease and pulmonary tuberculosis are almost never associated. In talking with cardiologists of the Michael Reese group last summer many had never seen a case. The stasis of the lungs seems to exert a prohibitive influence on the Koch's bacillus.

The next most commonly confused condition is bronchiectasis. The differentiation is more difficult and the two conditions may be associated. Many patients with this disease pass through life considered as tuberculous. In this condition there is cough, expectoration of foul smelling purulent sputum, hemorrhages, and rales. Of the 3444 cases of hemoptysis of Cabot 58 or 1.7% were due to bronchiectasis.

The history of the case extends over many years with cough and expectoration, yet the patient frequently does not fail markedly in health or lose in weight. Fishberg states, "We should not be rash in making a diagnosis of tuberculosis in a person who has coughed for many years and his general health has not suffered much, unless signs and symptoms are clear cut or the sputum is positive." Willis says, in *Laboratory Diagnosis and Experimental Methods in Tuberculosis*: "Since tubercle bacilli are nearly always demonstrable in the pus which comes from tuberculosis of the lung, the persistent presence of pus in sputum in which careful



and repeated search fails to reveal these germs is presumptive evidence against tuberculosis and points rather to abscess of the lung, bronchiectasis, a mycotic infection or some other non tuberculous disease."

The physical signs of bronchiectasis frequently reveals a scoliosis with the concavity turned toward the affected side. Rales are present but again, as in mitral disease, they are basal and frequently unilateral.

The radiograph of bronchiectasis may reveal nothing. Generally there is an increased linear marking extending downward from the hilus. A lipiodal injection followed by a radiograph is diagnostic. There is again no characteristic mottled appearance of tuberculosis.

So don't banish your patients to distant climes on account of hemoptysis. You must have at least two of the five cardinal signs present before you can make a positive diagnosis of pulmonary tuberculosis. Of course germs in the sputum is positive evidence of pulmonary tuberculosis. Lawrason Brown remarks, "It might be fair to state that the physician who follows the simple method of five cardinal signs may be found wrong in about 2% of cases."

#### REFERENCES

- Fishberg Pulmonary Tuberculosis.  
Pottenger, "Clinical Tuberculosis."  
Tice, "Practice of Medicine (T. B. section)."  
Loewenberg, "Diagnostic Methods in Internal Medicine."  
Personal notes taken at Trudeau School of Tuberculosis, Saranac Lake, N. Y., and at Michael Reese Hospital Group on diseases of the Heart and Circulation.

#### INFECTIOUS IN GENITO-URINARY TRACT, AND COMPLICATIONS: FURTHER ADVANCES IN TREATMENT

Hugh H. Young, J. A. C. Colston and J. H. Hill, Baltimore (Journal A. M. A., Feb. 27, 1932), state that the bacteriology of the urinary tract shows an extremely varied flora and organisms of a wide range of virulence and susceptibility to antiseptics. *B. coli* is inhibited by 1:500,000 mercuric chloride, whereas *B. lactis-aerogenes* is not inhibited until the strength of chloride in the broth culture reaches 1:30,000. The alkalizing bacteria are best combated by acids. The great difficulty of eradicating infections of the genito-urinary tract is due to the fact that the bacteria have usually penetrated deeply into the tissues and glands beyond the urinary passages. On this account, injections and irrigations frequently fail to eradicate the infection. The use of chemotherapy and protein therapy have been shown to be of distinct value. A series of complicated gonococcus infections, the cure of which was greatly hastened by the use of intravenous mercuriochrome, is cited as well as the failures. Gram-

positive coccus infections of the kidneys and bladder are shown by a series of cases to have been eradicated by intravenous injections of neoarsphenamine. Bacillary infections of the urinary tract, particularly the Aerobacter group, have been shown to be especially resistant, but cases that have responded favorably to intravenous injections of mercuriochrome are cited. Septicemias of urinary origin and cases of sepsis without blood stream infection are shown in some instances to be much benefited by chemotherapy. The authors reassert their confidence in the great advisability of supplementing local injections and irrigations in urinary infections with intravenous therapy.

#### ANTIDOTES FOR STRYCHNINE POISONING

Howard W. Haggard and Leon A. Greenberg, New Haven, Conn. (Journal A. M. A., April 2, 1932), describe experiments in which they demonstrated that magnesium sulphate does not prevent or even diminish strychnine convulsions in rats. It is not an antidote for strychnine. Apomorphine controls convulsions in rats, and dogs. It allows recovery after approximately twice the lethal dose of strychnine, but not when the dose is three times the lethal amount. Strychnine does not antagonize apomorphine or even diminish its toxicity for rats. The authors report three cases in which the use of apomorphine was followed by recovery in human beings who had taken presumably lethal amounts of strychnine. Phenobarbital sodium controls strychnine convulsion in rats and dogs. Recovery follows the administration of five times the lethal dose of strychnine. A true antagonism between the actions of phenobarbital sodium and strychnine is indicated. Rats and dogs that have received amounts of phenobarbital as high as three times the lethal dose may be saved by the administration of amounts of strychnine which by themselves would be fatal.

#### PNEUMOCOCCUS PSEUDOMEMBRANOUS PHARYNGITIS: REPORT OF FIVE CASES TREATED WITH HYDROCUPREINE HYDROCHLORIDE

De Wayne G. Richey, Pittsburgh (Journal A. M. A., Feb. 27, 1932), presents pertinent bacteriologic and clinical data from five adult persons suffering from an acute pseudomembranous pharyngitis, beginning in two cases as a stomatitis. In all the cases a typical pneumococcus was found, by standard bacteriologic methods of examination of the fibrinous exudate, to be the dominant micro-organism. Clinically the local symptoms are constant and consist of a severe sore throat, salivation, dysphagia and cervical adenitis; the systemic reaction varies considerably. The characteristic lesion is uniformly found: a white, fairly tough, fairly adherent, odorless sheet of fibrin on a superficially eroded oropharyngeal mucosa. It is very similar to the diphtheritic pseudomembrane caused by the Klebs-Loeffler bacillus. Diagnosis should be made by bacteriologic examination. The condition does not endanger life as a rule; attacks tend to recur. The lesion resists most types of local and general therapy. Striking results were obtained by the topical application of ethylhydrocupreine hydrochloride. The author stresses the cardinal importance of a close cooperation between the clinician and the bacteriologist.

# THE JOURNAL

OF THE

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

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### EDITORIAL

#### THE MEDICAL RESERVE CORPS.— ITS PERSONNEL; ITS MISSION

The prevention of unnecessary suffering, disease and death, at a time of mobilization of troops, requires a great many more medical officers than the standing army possesses.

This is provided for by having a Reserve; a corps of civilian doctors, physically, mentally and professionally fit, sufficiently acquainted with the rudiments of military routine to comfortably, quickly and successfully do their work—if called upon in an emergency.

Surely every physician worthy of the

name is willing to stay with his constituents when they are transported from their homes to a military camp.

Not every physician is physically, mentally or professionally fit for military service. A rudimentary acquaintance with military routine is necessary in military service. To minimize assignment of square pegs to round holes executives must have some acquaintance with those they direct.

For these reasons organization and training of Reservists is essential. The value of a Medical Reserve Corps is inversely proportionate to the age of the majority of its members.

Consequently the Corps Area Surgeon, and the present members of the Reserve Corps, are anxious that all the members of the profession be acquainted with the Reserve Corps and solicitous for its perpetuation in numbers and knowledge sufficient to assure decent medical care of men mobilized to meet an emergency.

All young physicians should be members of the Reserve, if eligible; all others should give it their interest, sympathy and support. To facilitate such, the organized Reserve officers hold a meeting, usually an inexpensive banquet, at the time and place of the annual meeting of the Oklahoma State Medical Association; this year at Tulsa there will be such a meeting, everyone is most earnestly invited to attend.

—JOHN A. RODDY, M.D.

#### YOUR PAPERS FOR THE ANNUAL MEETING

Once again it becomes the duty of the editor to call attention to the necessity of every writer of a paper to be presented at the Annual Session, to prepare it exactly as it should appear in our Journal; that means:

- (a) Title.
- (b) Writer's name and address.
- (c) Time and place of reading.
- (d) Be sure and do not carry this paper

away from the meeting as it only necessitates correspondence, often loss of the paper and sometimes printing it out of its proper turn.

These papers should be typewritten (double spaced), carefully corrected, then recopied in duplicate, triplicate preferred, so if the original is lost a copy is obtainable.



## MAINTAINING PROGRESS

The writer recently had his attention called to a curious commentary by "Mark Twain," (Samuel L. Clemmens), who was not only one of America's greatest humorists, but a philosopher, as shown by his writings, and one of the keenest observers of all things about him. From a story by Mark Twain, "The Majestic Literary Fossil" the following is noted: "This introduction brings me to my literary relic. It is a Dictionary of Medicine, by Dr. James, of London, assisted by Mr. Boswell's Doctor Samuel Johnson, and is a hundred and fifty years old, it having been published at the time of the rebellion of '45. If it had been sent against the Pretender's troops there probably wouldn't have been a survivor. In 1861 this deadly book was still working the cemeteries—down in Virginia. For three generations and a half it had been going quietly along, enriching the earth with its slain. Up to its last free day it was trusted and believed in, and its devastating advise taken, as was shown by notes inserted between its leaves."

A few months ago a colleague of mine, while hunting near Muskogee, having some time on his hands while a friend transacted some business, stepped up stairs to a doctor's (?) office, intending to make a friendly call. The doctor (?) was out; on the wall hung a diploma of the early '90's; investigating further the visitor noted that every volume of the few which the office contained, was of the vintage of the year of the doctor's graduation. There was no evidence whatever of modern literature or modern equipment. Dust and disorder was the principal feature encountered.

These are the things that often bring criticism not only to the doctor in question, but the entire profession, by its invidious reproach. The absolute necessity for all physicians to appreciate that their work must be a life work, one of continuous study, should be impressed upon them. Nothing in the arts of science has progressed to the extent of medicine in the last thirty or forty years. No man can cover the entire field, but every man should keep abreast of modern times. This can only be done by continuous application, careful analysis and sensible application of those believed to be best.

## THEN AND NOW

Called upon recently to write a paper for the Muskogee County Medical Society, the editor believes that some of the information culled from old records will be of interest to Oklahoma physicians. It is as follows:

"Minutes, Muskogee, Indian Territory, April 18, 1881. At 2:00 P. M., a number of medical gentlemen met pursuant to a previously circulated call for a mass convention for the purpose of medical organization. The convention was called to order by Dr. B. F. Fortner, who named Dr. G. W. Cummings to the chairmanship of the convention, which was unanimously confirmed. The organization was completed by the election of Dr. Cutler, vice-president, and Drs. Fortner and C. Harris as secretaries. The chair proceeded to state the object of the meeting by reading the original call and address appended. The chair proceeded to appoint a committee on Constitution and By-Laws, consisting of Drs. B. F. Fortner and Felix McNair.

"The notes of the following meeting are very brief or entirely absent. A Constitution was adopted and the dues were fixed at \$1.50 annually. Among these organizers, not one is living today, and so far as I am able to say the minutes of October 10, 1889, show only five physicians living. Among those are: Drs. R. L. Fite, Tahlequah; F. B. Fite, Muskogee; Oliver Bagby, Vinita; Geo. A. McBride, of Texas.

"The Oklahoma Territorial Association was organized in a similar manner May 9, 1893, at Oklahoma City. It is significant that the committee on the Constitution and By-Laws 'Recognized the adoption of the Constitution and By-Laws of the Indian Territory Medical Association with the following changes in the Constitution, *namely*: Dues \$1.00—censors, three.'

"When it became inevitable that both Oklahoma and Indian Territory would likely become one state, overtures were made from each society to the other and an agreement for amalgamation or merging was entered into in 1907. The writer was present at the meeting at Oklahoma City as one of the representatives from Indian Territory. So far as is known only three of that committee are living; Doctors G. A. Wall, Tulsa; E. O. Barker, Guthrie; and the writer."

Recently Dr. Ray Lyman Wilbur, a member of President Hoover's Cabinet

and former President of Leland-Stanford University, California, stated that "Within three decades American Medicine has been made over. The laboratory has won its way into every department of the medical school, as well as the hospital. Empiricism has largely succumbed to the scientific method. The doctor who is working today with the education given him thirty years ago belongs in the antique shop. The doctor who does not read the current medical journals, follow the activities of the various medical societies and attend occasional clinics, is not a good public servant. The doctor's life is one of clinical experiences, study and reflection, and association with his fellows. Many facilities are now required to care for the sick in a satisfactory and intelligent manner. With the telephone, improved highways, automobile, trained nurse, and hospitals, most parts of our country offer the doctor time-saving methods of caring for the sick. If the time saved goes either from day to day, concentrated in several weeks at a time, into periods for relaxation for personal health and into opportunity for further study, great professional advances are possible."

For a new state, Oklahoma has undoubtedly made remarkable progress in all matters medical. Years ago the Rockefeller Foundation noted that it started out with the best that was to be had at that time, modern in every respect, and most centers since that time have kept up to par. To my mind there is no doubt but what the highly efficient service, medical and surgical, which may be obtained in many localities in Oklahoma today, is due to cooperation on the part of a few physicians and in passing I feel that I must say that the man practicing medicine or surgery today, who must depend solely and entirely on his own efforts is certainly not in position to render the service the public demands. Please understand that I do not criticise or decry that ability—clinical diagnosis—which must always be kept first in mind by the man who has a well rounded out clinical and diagnostic knowledge plus the aid of many modern improvements in diagnosis, but he has a great advantage over the man who attempts to rely solely on his clinical observations; Oklahoma certainly has many of these. The physician keeps abreast by attending clinics, burning midnight oil and delving into literature in order to render that service which is due his patient. Per-

sonally I feel a great pride in this continued and sustained effort to keep abreast of modern medicine."

—O—

### **Editorial Notes—Personal and General**

DR. T. H. BRIGGS, Wewoka, is a candidate for commissioner in Seminole County.

DR. AND MRS. JAS. T. RILEY, El Reno, visited friends in St. Louis in March and April.

DR. J. N. HARBER, Seminole, who spent the last two months in Arizona, has returned to his home.

DR. W. J. WALLACE, Oklahoma City, recently addressed the Y. M. C. A., on "When a Man Marries."

DOCTOR S. E. MITCHELL, Muskogee, took a one month trip to southern states during March and April.

Dr. J. P. TORREY, Bartlesville, has been appointed County physician to succeed Dr. J. V. Athey, resigned.

DR. ELLIS LAMB, Clinton, attended the American College of Physicians meeting, held at San Francisco in April.

DR. EMILE ROY, Tulsa, who was recently injured in a collision of his automobile and a street car, is reported improved.

DR. WINNIE M. SANGER, Oklahoma City, addressed the Bristow High School on the "Problems of the Youth of Today."

DOCTOR PAT FITE, Muskogee, attended the meeting of the Southern Society of Clinical Surgeons held at Rochester in April.

DR. W. C. VERNON, Okmulgee, has returned from Vienna, after several month's stay, where he took a post-graduate course in surgery.

DR. C. O. EPLEY, Oklahoma City, General Practice, announces his removal from the Medical Arts Building, to the McBride Clinic, 717 No. Robinson.

ROGERS COUNTY MEDICAL SOCIETY elected Doctors C. W. Beson, Claremore, president; Ira B. Nelson, Claremore, vice-president; W. A. Howard, Chelsea, secretary-treasurer.

DR. L. A. TURLEY, Norman, of the University School of Medicine talked on "Radiant Light and Its Effect on Tissue," April 7th, at the monthly meeting of Cleveland County Medical Society.

STEPHENS COUNTY MEDICAL SOCIETY met April 26th and after a dinner at the new Duncan Hotel, Dr. Arthur W. White read a paper on "Peptic Ulcer" and Dr. C. B. Taylor on "Traumatic Rupture of the Urethra," both of Oklahoma City. The meeting were guests of Doctors W. T. Salmon and B. H. Burnett.



MEDICAL RESERVE CORPS OFFICERS, through their chairman, Dr. Paul R. Brown, Tulsa, announce a dinner for 6:00 P. M., Mayo Hotel, Wednesday, May 25th. Reservations should be made with Dr. Brown.

MR. PAUL FESLER, former superintendent of University Hospital, Oklahoma City, and for a number of years superintendent of Minneapolis Hospital, and now superintendent of one of the largest Chicago Hospitals, visited Ardmore in the interest of hospitalization problems recently.

GARFIELD COUNTY MEDICAL SOCIETY had its annual guest day March 31st, with the arrangements in the hands of the officers of the County Society. The speakers included Dr. H. Winnett Orr, Lincoln, Nebraska, who presented a paper on "Osteomyelitis"; Dr. Willard Bartlett, Jr., St. Louis, who gave a paper on "Coronary Occlusion, With Special Reference to Blood Supply." Among other entertaining features was a banquet, followed by motion pictures.

#### DOCTOR CHARLES K. TILLISON

Dr. Charles K. Tillison was graduated from St. Joseph Medical College, St. Joseph, Mo., in 1893. He began practicing in Bartlesville in 1896, and after a few months removed to Ramona, Oklahoma, practicing there until 1929, when he became disabled by an attack of cerebral hemorrhage. He was a charter member of the Washington County Medical Society and was a member at the time of his death, which occurred April 13, 1932, at Ramona, Oklahoma. He was 62 years of age.

#### DOCTOR JEFFERSON D. KISER

Dr. Jefferson D. Kiser was born in Lexington, Kentucky, in 1868; was graduated from Kentucky School of Medicine, Louisville, Kentucky, in 1894. He practiced in Lexington, Kentucky, until 1917, and has practiced in Bartlesville as an Eye, Ear, Nose and Throat Specialist since that time. He died suddenly from a heart attack, April 14, 1932. He was a member of the Washington County and Oklahoma State Societies and a member of all Masonic bodies.

#### DOCTOR MARY E. BARNES RAY

Dr. Mary E. Barnes Ray, aged 69, was graduated from Cleveland University of Medicine and Surgery, Cleveland, Ohio, in 1887. Dr. Ray was located in Tecumseh, Oklahoma, for many years and came from there to Bartlesville, where she practiced until her retirement about five years ago. During her residence in Bartlesville she was an active member of the Washington County Medical Society, and since her retirement she has lived with her daughter, Mrs. George Gay, in Ponca City, where she died April 12, 1932, of heart failure.

#### DOCTOR WILBUR E. RAMMEL

Whereas, the Almighty in His infinite wisdom, has removed from our midst our dear friend and fellow worker, Dr. Wilbur E. Rammel.

Be It Hereby Resolved, that in the passing of Dr. Rammel, our hearts are made sad by the loss of a well loved friend and fellow physician, and that our sympathy goes out to the grief stricken family in this their hour of trouble.

Be It Further Resolved, that in the death of our friend we feel that the profession which he honored has lost one of its most earnest and sincere workers, and the community one of its most useful and valuable citizens.

And Be It Further Resolved, that one copy of these resolutions be sent to the Journal and one copy sent to the family.

Committee,

O. I. GREEN,

W. H. SHIPMAN,

Washington County Medical Society

#### DOCTOR J. CHARLES SCHLIGHT

Dr. J. Charles Schlicht died at his home in McAlester, April 2, 1932, of acute septic endocarditis.

Dr. Schlicht was born, April 24, 1881, and had been a resident of Pittsburg County for thirty years. He was married in 1903 to Miss Mattie Walker, who with his two sons, Earl and Otto survive. He was a member of the Masonic Lodge in Scipio, the Consistory in McAlester and the Shrine in Muskogee. He attended the First Christian Church.

In the passing of Dr. Schlicht, not only is his loss keenly felt by his associates of many years in the medical profession, but also to his legion of friends throughout the countryside. His talents were well developed, making him an appreciated counselor and his unswerving devotion to practice regardless of his patient's ability to remunerate him are outstanding features.

The Pittsburg County Medical Society extends its sincere sympathy to the bereaver family and desires it to be known that it mourns Dr. Schlicht's passing.

#### GOLF AND INFANT FEEDING

It is possible to play over the entire course with a single club and bring in a fair score. But playing with only one club is a handicap. The best scores are made when the player carefully studies each shot, determining in advance how he is going to make it, then selects from his bag the particular club best adapted to execute that shot.

For many years, Mead Johnson and Company have offered "matched clubs," so to speak, best adapted to meet the individual requirement of the individual baby.

We believe this a more intelligent and helpful service than to attempt to make one "baby food" to which the baby must be adapted.

# PROGRAM

## FORTIETH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, OKLAHOMA,

MAY 24, 25, 26, 1932.

(Program subject to change)

*Meeting Place*—All meetings will be held in the Hotel Mayo, Telephone, 3-2141 (local) ; L. D. 100.

*Registration*—Sixteenth Floor, Hotel Mayo. All physicians except those from outside the State and visiting guests, must hold membership certificates for 1932 before registering. It is urgently requested that you see your County Secretary if you are not in good standing and become so before this meeting.

Woman's Auxiliary will register on the Mezzanine floor, Hotel Mayo.

*Dermatology and Radiology Society*—Will hold clinics during the morning of May 24th, 9:00 A. M., Crystal Ball Room. Papers and the regular program will be heard in the afternoon, in the same room.

*Oklahoma Pediatric Society*—Will hold clinics during the morning of May 24th, 9:00 A. M., Hotel Mayo. Its regular program of papers and discussions will be held in the afternoon, in the Junior Ball Room, Mezzanine floor.

*Medical Reserve Corps Dinner*—Hotel Mayo, 6:00 P. M., May 25th. For reservations apply to Dr. Paul R. Brown, Tulsa.

Guest of honor at the dinner will be Lieut.-Colonel Sanford W. French, Station Hospital, Fort Sam Houston, Texas.

*Council*—Will meet at 4:00 P. M., Tuesday, May 24th, Hotel Mayo, and thereafter upon the call of the President. It is the function of the Council to originate and consider all business affairs of the Association. All such matters should be presented to the Council before going to the House of Delegates.

*House of Delegates*—Will meet in the Crystal Ball Room at 7:30 P. M., Tuesday, May 24th, for the transaction of such business as is necessary. House of Delegates also meet at 8:00 A. M., Wednesday, May 25th. This meeting will be held in the large meeting room on the Mezzanine floor. The first order of business will be

the election of officers, after which unfinished business will be disposed of.

*Delegates*—Prior to the meeting Delegates will submit their credentials to the Credentials Committee, small meeting room, sixteenth floor, Hotel Mayo.

*Golf*—Tulsa followers of golf have arranged for a tournament at the Tulsa Country Club, Tuesday, May 24th.

The American Social Hygiene Association will present during the meeting, films on "The Modern Treatment of Syphilis" and "Gonorrhoea," in the main private dining room, Mezzanine floor.

### TULSA COUNTY COMMITTEES

Doctor W. J. Trainor, Tulsa, Chairman of the Committee on Arrangements on behalf of the Tulsa County Society, announces the following Committees to handle the work of the annual meeting, at Tulsa, May 24, 25, 26, 1932:

*General Chairman.* W. J. Trainor, 1011 Medical Arts Bldg., Tulsa, Okla.

*Registrations.* C. C. Hoke, Petroleum Building, Tulsa.

*Finance.* W. Albert Cook, 1107 Medical Arts Bldg., Tulsa.

*Entertainment.* W. A. Showman, 409 Medical Arts Bldg., Tulsa.

*Hotels.* James Stevenson, 615 Medical Arts Bldg., Tulsa.

*Golf.* Charles J. Wood, 511 Medical Arts Bldg., Tulsa.

*Ladies' Entertainment.* Women's Auxiliary of The Tulsa County Medical Society, Tulsa.

*Reserve Officers.* Paul R. Brown, 517 Medical Arts Bldg., Tulsa.

*Scientific Exhibit.* Morris B. Lhevine, 1007 Medical Arts Bldg., Tulsa.

*Fraternal Dinner.* Ralph A. McGill, 1010 Medical Arts Bldg., Tulsa.

*Badges.* J. C. Brodgen, Mayo Bldg., Tulsa.



## WOMAN'S AUXILIARY

*General Headquarters*—Hotel Mayo.

*Registration*—Mezzanine floor, Hotel Mayo.

*Alfresco Party*—At "Ledgerton" the suburban home of Mrs. Fred Y. Cronk, Tuesday evening, May 24th, 6:00 P. M.

*Business Meeting of Woman's Auxiliary* Wednesday, May 25th, 10:00 A. M., Hotel Mayo.

*Presiding*—Mrs. Herbert L. Wright, President.

*Musical Tea*—At "Clinton Ingleside" the home of Mrs. Fred S. Clinton, Wednesday, May 25th, 3 to 5 P. M.

*Luncheon*—Tulsa Club, Thursday, May 26th, 12:30 P. M.

*Tea*—For the retiring and newly elected officers, Mrs. Charles J. Wood, hostess, University Club, Thursday, May 26th, 3 to 5 P. M.

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GENERAL SCIENTIFIC SECTIONS

Will meet May 25th, 8:30 A. M. Crystal Ball Room, sixteenth floor. (All papers and addresses limited to forty-five minutes).

WEDNESDAY, MAY 25TH  
(Morning)

8:30 *Clinic—Ocular Migraine, Its Syndrome and Treatment*—E. J. CURRAN, Kansas City, Mo. Crystal Ball Room, Hotel Mayo.

9:30 FRANK C. NEFF, Kansas City, "Active Immunization Against Diphtheria."

10:15 *Address*—MAJOR GENERAL HUGH CUMMING, Surgeon General U. S. Public Health, Washington, D. C.

11:00 *Section on General Surgery*, Crystal Ball Room.

11:00 *Section on General Medicine*, Junior Ball Room.

(Afternoon)

1:30 *Section on General Medicine*, Junior Ball Room.

*Section on General Surgery*, Crystal Ball Room, sixteenth floor.

*Section on Eye, Ear, Nose and Throat*, small meeting room, sixteenth floor.

## GENERAL MEETING

*General Chairman*—W. J. TRAINOR, presiding.

8:00 *Invocation*—REV. CLAUD HILL, Pastor First Christian Church, Tulsa, Oklahoma.

*Address*—Honorable PAT MALLOY, Tulsa, Oklahoma.

*Introduction of Guests*—H. C. WEBER, President, Bartlesville, Okla.

*Introduction of Guests.*

*Address*—R. M. ANDERSON, President, Shawnee.

(Evening)

9:00 *Reception and Dance*, Crystal Ball Room.

THURSDAY, MAY 26TH  
(Morning)

8:30 *Clinics*, Tulsa County Medical Society, Crystal Ball Room.

9:30 *Address*—ARTHUR E. HERTZLER, Halstead, Kansas.

10:15 *Allergy As Met With in the United States Army*—LIEUT.-COLONEL SANFORD W. FRENCH, Station Hospital Fort Sam Houston, Texas.

11:00 *Section on General Surgery*, Crystal Ball Room.

11:00 *Section on General Medicine*, Junior Ball Room.

(Afternoon)

1:30 *Section on General Medicine*, Junior Ball Room, Mezzanine floor.

*Section on General Surgery*, Crystal Ball Room, sixteenth floor.

*Section on Eye, Ear, Nose and Throat*, small meeting room.

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SECTION ON GENERAL MEDICINE

Junior Ball Room, 11:00 A. M.,  
May 26, 1932

*Chairman*, HENRY H. TURNER, Oklahoma City.

*Secretary*, FREDERIC G. DORWART, Muskogee.

*Chairman's Address—Anterior Pituitary Hormone*—HENRY H. TURNER, Oklahoma City.

*The Physician, a Leader in Mental Hygiene*—J. L. DAY, Norman.

*The Emotions in Medicine*—M. S. GREGORY, Oklahoma City.

*Vocational Rehabilitation of Tuberculosis Patients*—F. P. BAKER, Talihina.

*More Recent Advances in the Treatment of Pulmonary Tuberculosis*—R. M. SHEPARD, Tulsa.

*Artificial Pneumothorax in Pulmonary Tuberculosis with Special Reference to the Cauterization of Adhesions*—LEWIS J. MOORMAN, Oklahoma City.

*A Pollen Survey of Northeastern Oklahoma*—E. RANKIN DENNY, Tulsa.

*Cistern Puncture in Neurosyphilis*—J. F. CAMPBELL, Muskogee.

*Non-Valvular Heart Disease*—WANN LANGSTON, Oklahoma City.

*Treatment of Hypertension with Bismuth Subnitrate*—RUSSELL C. PIGFORD, Tulsa.

*Hospitalization in Veterans Administration Hospitals*—E. A. WELCH, Muskogee.

*Ringworm and Its Allied Eruptions*—DARRELL G. DUNCAN, Oklahoma City.

*New Concepts of Liver Function. Report of a case of Primary Carcinoma of the Gall Bladder*—IAN MACKENZIE, Tulsa.

*Kummell's Disease of Bone*—F. J. WILKEMEYER, Muskogee.

*Two years of Vaccine Therapy in Chronic Infectious Arthritis; Reactions and Results Obtained from Same*—E. GOLDFAIN, Oklahoma City.

*Diphtheria*—GEORGE H. GARRISON, Oklahoma City.

*The Management of Abortion*—J. B. ESKRIDGE, Oklahoma City.

*Gastro Intestinal Symptoms due to Allergy*—RAY M. BALYEAT, Oklahoma City.

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### PROGRAM

### OKLAHOMA STATE PEDIATRIC SOCIETY

WITH THE

Oklahoma State Medical Society

TUESDAY, MAY 24, 1932.

(Morning)

*Chairman*, C. E. BRADLEY, Tulsa.

*Secretary*, GEO. H. GARRISON, Oklahoma City.

9:00 *Clinics*—Solarium, Morningside Hospital.

11:00 *Address*—FRANK NEFF, Kansas City, Mo.

(Afternoon)

1:30 o'Clock—Mayo Hotel

*Chairman's Address*—C. E. BRADLEY, Tulsa.

*Infantile Tetany*—WM. TAYLOR, Oklahoma City. Discussion opened by M. J. SEARLE, Tulsa.

*Rheumatism*—HUGH GRAHAM, Tulsa. Discussion opened by G. H. GARRISON, Oklahoma City.

*Diarrhea*—B. H. NICHOLSON, Oklahoma City. Discussion opened by F. S. ETTER, Bartlesville.

*Enuresis*—C. F. PARAMORE, Shawnee. Discussion opened by CLARK H. HALL, Oklahoma City.

*Pyelitis*—HUGH J. EVANS, Tulsa. Discussion opened by CHARLES E. WHITE, Muskogee.

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### SECTION ON DERMATOLOGY AND RADIOLOGY

*Chairman*, CHAS. J. WOODS, Tulsa.

*Secretary*, CARL BRUNDAGE, Oklahoma City.

The following program will be offered in the Crystal Ball Room, Hotel Mayo, Tuesday, May 24th:

10:00 to 12:00 *Dermatologic Clinic*.

12:00 to 1:00 Luncheon.

1:00 to 2:00 Discussion of Clinical cases.

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### SECTION ON EYE, EAR, NOSE AND THROAT

*Chairman*, A. L. GUTHRIE, Medical Arts Bldg., Oklahoma City, Oklahoma.

*Secretary*, J. F. GORRELL, Medical Arts Bldg., Tulsa, Oklahoma.

WEDNESDAY, MAY 25, 1932.

1. *President's Address—Preliminary Observation of Bacteriophage in the Respiratory Tract*—A. L. GUTHRIE, Oklahoma City.

2. *Examination of the Ear in Industrial Accidents*—T. G. WAILS, Oklahoma City. Discussion opened by M. K. THOMPSON, Muskogee.



3. *The Management of Paralysis of the Ocular Muscles*—CHARLES B. BARKER, Guthrie. Discussion opened by CHARLES HARALSON, Tulsa.
  4. *Some Suggestions Regarding the Tonsils*—H. COULTER TODD, Oklahoma City. Discussion opened by W. M. JONES, Tulsa.
  5. *Treatment of Chronic Maxillary Sinusitis*—JAMES C. BRASWELL, Tulsa. Discussion opened by EDMUND S. FERGUSON, Oklahoma City.
  6. *Iodized Oil in Diagnosis of Chronic Maxillary Sinusitis*—ARTHUR H. DAVIS, Tulsa. Discussion opened by HARRY PRICE, Tulsa.
  7. *Traumatic Perforation of the Nasal Septum*. Report of interesting case—HOWARD S. BROWNE, Ponca City. Discussion opened by ROY W. DUNLAP, Tulsa.
- THURSDAY, MAY 26, 1932.
- Address—Some Aspects in the Etiology and Treatment of Acute and Chronic Glaucoma*—E. J. CURRAN, Kansas City, Missouri.
8. *Tumors of the Naso-Pharynx*—WM. BONHAM, Oklahoma City. Discussion opened by H. COULTER TODD, Oklahoma City.
  9. *Infectious Mononucleosis*—C. M. FULLENWIDER, Muskogee. Discussion opened by D. W. MILLER, Blackwell.
  10. *Eye Grounds in Everyday Practice*—ALONZO C. MCFARLING, Shawnee. Discussion opened by W. A. COOK, Tulsa.
  11. *Stereoscopic Treatment of Heterophoria*—W. A. HUBER, Tulsa. Discussion opened by L. M. WESTFALL, Oklahoma City.
  12. *Tracheotomy, Its Indications and Management*—L. C. MCHENRY, Oklahoma City. Discussion opened by A. W. ROTH, Tulsa.
  13. *Agranulocytic Angina*—J. C. MACDONALD, Oklahoma City. Discussion opened by WANN LANGSTON, Oklahoma City.
  14. *Sinusitis in Children*—J. W. BEYER, Tulsa. Discussion opened by FORREST S. KING, Muskogee.

## SURGICAL SECTION

WEDNESDAY, MAY 25, 1932.

(11:00 A. M.)

FRED S. WATSON, Okmulgee, Chairman.  
W. G. HUSBAND, Hollis, Secretary.

*Address by the Chairman*—FRED S. WATSON, Okmulgee.

*The Gall Bladder*—WALTER E. SISTRUNK, Dallas, Tex. Discussion—LEROY LONG, Oklahoma City.

*A Method of Determining Percentage of Partial Permanent Disability for Industrial Courts*—EARL D. MCBRIDE, Oklahoma City. Discussion—CURT VONWEDEL, Oklahoma City.

*Occipito-Posterior Position*—DICK LOWRY, Oklahoma City. Discussion—M. B. GLISMANN, Okmulgee.

*Indication for Operation in Minor Gynecological Disease*—ARTHUR E. HERTZLER, Halstead, Kansas. Discussion—CHARLES D. O'HERN, Tulsa.

*Phrenicectomy as an Aid in the Treatment of Pulmonary Tuberculosis*—FLOYD MOORMAN, Oklahoma City. Discussion—PHIL MCNEIL, Oklahoma City.

*Perforating Ulcers of Stomach and Duodenum*—ROY FISHER, Frederick. Discussion—FRANK MCGREGOR, Mangum.

*Gynecology*—S. N. MAYBERRY, Enid,. Discussion—JOHN H. WHITE, Muskogee.

*Femoral Hernia*—OSCAR WHITE, Oklahoma City. Discussion—G. A. KILPATRICK, Henryetta.

*Burn Contractures*—JOHN F. BURTON, Oklahoma City. Discussion—A. L. BLESCH, Oklahoma City.

*A Further Study of Thyroid Problems*—MARCUS O. SHIVERS, Colorado Springs, Colorado. Discussion—HORACE REED, Oklahoma City.

*Trans-urethral Prostatectomy*—REX BOLEND, Oklahoma City. Discussion—HENRY BROWN, Tulsa.

*Low Back Pain With Particular Reference to the Congenital Abnormalities in the Lumbosacral Region*—FRANK DICKSON, Kansas City, Missouri. Discussion—KELLY WEST, Oklahoma City.

*Eclampsia, a Discussion of Its Medical and Surgical Treatment*—GEORGE R. OS-

BORN, Tulsa. Discussion—WALTER W. WELLS, Oklahoma City and J. G. SMITH, Bartlesville.

*Fractures of the Tibia and Fibula*—CHARLES R. ROUNTREE, Oklahoma City. Discussion—WADE SISLER, Tulsa.

*Carcinoma of the Cervix*—WENDELL LONG, Oklahoma City. Discussion—F. L. CARSON, Shawnee and PAT FITE, Muskogee.

*Causation and Treatment of Simple Goiter*—J. W. HENDRICK, Amarillo, Texas. Discussion—L. S. WILLOUR, McAlester.

*Importance of Early Diagnosis of Brain Tumors*—HARRY WILKINS, Oklahoma City. Discussion—NED R. SMITH, Tulsa.

*Case Report of Bilateral Orbital Abscesses following Sinusitis*—FRED S. CLINTON and BENJ. W. WARD, Tulsa. Discussion—PAT FITE, Muskogee.

## COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

### REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND HOSPITAL

To the President and the Members of the House of Delegates of The Oklahoma State Medical Association:

It is the belief of the members of this committee that a "report" should really have something to tell about—that it should record some definite knowledge or observations, in order that this knowledge may become the property of a larger group of people—in this case physicians; to the end that the conditions which the report explains may be commended and approved. Or if the conditions are not favorable, that they may be perhaps corrected by securing the intelligent and active cooperation of the profession at large.

In fulfillment of this belief the chairman of the committee recently made a visit of inspection to our State Medical School, the University Hospital and the Childrens' Hospital at Oklahoma City, and this report includes some of the observations of that visit.

Little need be said in regard to the Medical School. Rated since March, 1920, as a Class 'A' School, it is in good hands so far as the faculty is concerned. Our concern is, as to whether political interference and executive bungling together with the denial by the legislature of proper financial support will not result in the loss of our high position in medical education. It behooves all the members of our profession to use their every influence to explain this danger to our representatives in our legislative and executive offices.

It is to be regretted that "Medical Education" can not begin far enough back in our body politic to make its way into the crania of some of our legislators and executives. But that unfortunate defect we must try to remedy.

At the University Hospital the waiting rooms were crowded, with sick and ailing men and women who were striving to regain health and the ability to earn a living. It is to be remembered that these people come not only from Oklahoma City and the immediate environment, but from all over the state so that this hospital and its staff serve directly or indirectly all of the state.

The records show that apparently a few of the physicians of the state utilize the facilities and the staff of the University Hospital for the diagnosis of some of their private cases. Be that as it may, the work which the University Hospital is doing should be of inestimable value both economically and scientifically to the whole state. Economically because many of these patients are returned as self supporting to their home communities. Scientifically, because the data as to the medical facts gathered from the study of the mass of cases should be sifted and classified and made available to all physicians. But for the attainment of this larger purpose—at least adequate if not generous appropriations of financial support must be granted by our legislators.

The fifteen dollars per week which the county is supposed to pay does not cover even the hospital care, to say nothing of the enormous amount of gratuitous work in diagnosis, in medical and Surgical treatment which is contributed by the members of the hospital staff and the faculty of the Medical School. As a matter of fact, the Superintendent has figured that whereas the county pays \$2.15 per day for the care of patients, the actual cost is approximately \$4.00, leaving an actual daily deficit for each patient.

Since many of the counties are unable to pay the above small charge it has been necessary for the University Hospital to carry unpaid accounts in excess of \$300,000.00.

In this connection another significant fact was learned; whereas, the appropriations for the Medical School, University Hospital and the Childrens' Hospital total some \$500,000, the minimum value of the gratuitous services rendered by the official staff of the University Hospital of Oklahoma School of Medicine to patients in the University and Crippled Childrens' Hospital for the fiscal year 1930-31 totals more than \$700,000. I am quoting from statistics in the Superintendent's office where they can be verified by any one at any time.

Most of the Hospital beds were full and there is a long waiting list. This means that the hospital is overcrowded and more beds and better facilities are greatly needed in order to care for the clinical as well as for the teaching work of the hospital.

The Social Service Department is under excellent supervision and is doing its best with limited means and help to rehabilitate individuals, and to remedy the home and environmental conditions out of which illness and loss of earning capacity may have come.

The members of the hospital staff and of the medical school faculty are all engaged in the amelioration of suffering, giving unstintingly of



their time and energy and thought. It would seem that their findings and experiences and conclusions, the statistics which they could gather should be made available to all. But to this end they must be provided with better facilities, more clerical help in order that their findings may be made usable and useful.

No words are adequate to tell of the fine constructive work which is being done by the staff members at the Crippled Childrens' Hospital. Such an institution can be described only as a blessing to the State. It is regrettable, however that due to our tardiness to see a public need it should have been left largely to the foresightfulness and humanitarian instinct (largely) of a private citizen to provide this magnificent institution. But it is a fine thing for our state that such men exist in our midst and are willing to contribute so generously for the common good. All honor to them. Rather than to put obstacles in the way of such spirited citizens, it would seem to be the part of decency and wisdom, to support their work and their efforts for the public welfare—and that not only with our "moral support" but with wise and adequate appropriations of public moneys.

The Extension Department of the Medical School has done excellent work in providing medical clinics and short time graduate courses for the physicians of the State. Whether the lectures and the clinical teachers at these courses be from within or without the state, the Extension Department needs money in order to continue this service. Oklahoma should (have) establish (before this) an adequate Cancer Clinic, working in harmony with the national organizations for the eradication of this disease, and to make the proposed weekly conferences and other services of such a clinic available to all the physicians and people of the state, some means must be found to finance the organization. Where are these means to be found if not in appropriations of public money?

Closely related to this work is the need of enlarging the Pathological Laboratories of the Medical School and the Hospitals. More workers and better facilities are needed to utilize the material available for diagnostic and research purposes, (perhaps including another full time trained pathologist).

As physicians we have a right to be proud of the high standing of our State University Medical School. The scientific training qualifications of the faculty, as of the staffs of the associated hospitals are of the best.

But if these institutions are to serve their highest purposes, the treatment of disease on the one hand and the training of the physicians of the future on the other, two conditions are essential: Adequate financial support must be provided by the state, and the conduct of these institutions must be left only to those qualified by scientific training and temperament. It is fatal to progress in educational matters if political preferment rather than educational attainments dictates the appointment and the activities of our educators.

Private donations and bequests to our public hospitals and educational institutions can hardly be expected until assurance can be given that these institutions will be free of unwise political interference and party dominance.

In order that the highest functions of our State Medical Institutions may be realized, we the bonafide, scientific physicians of the state need to recognize the opportunities as well as the dangers which confront these institutions. It is only just that we commend the unselfish efforts which our colleagues at the front have made to maintain our high standards while deploring the malign influences which jeopardize those standards.

Having offered this brief for our State Hospitals, there is also a word to be said for the private hospitals of our state. These institutions are a necessary part of our community assets in the fight against disease. Apparently they must carry on, until the respective communities become enlightened enough to provide municipal or community hospitals. Since only through such institutions, citizens do join in the common duty of their maintenance. For this is true: Sickness and disease and accidents and poverty should not be the affair of the physicians alone, either as private practitioners or as owners of hospitals. For we doctors pay our taxes as do other citizens, and when in addition we are forced to the gratuitous care of too many indigent sick we are burdened with a double taxation which is unfair in the extreme. And as yet we have no recourse. Not all our indigent poor can be sent to the University Hospital. Its capacity is too small and waiting list too large. And yet our county commissioners over the state too uniformly disclaim any responsibility for the care of the poor sick or at best will grant only an inadequate allowance for care by the private hospital. In addition, almost daily automobile and other accidents, with their usual toll of crippled patients requiring special care and leaving behind a mass of unpaid accounts which are likely to bankrupt the less hard hearted doctors and hospitals. For while any so called hotel may legally collect or punish an unpaid board bill, the owners of private hospitals can only hold the sack. And the end and the remedy is not yet. It behooves the thoughtful members of our profession to ponder these problems, for in the end they concern all of us physicians. How we meet them will determine whether real education is becoming common among the profession.

A. S. RISSER, M.D., Chairman,  
ARTHUR W. WHITE, M.D.,  
FRANK H. MCGREGOR, M.D.

#### REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

A great deal of time and money are spent by the members of the medical profession to keep up to date and abreast of the times in the science of medicine. This is as it should be. But how little is spent in keeping up to date on how to manage our financial relation with our patients. There are ways and means of keeping abreast of the times in financial matters that is entirely outside the realm of medical science. All the losses in practice are not uncollected bills. For example, there is very much to be said about how to approach a patient in discussing financial matters, to know what to charge and when to charge it. There are also many other phases.

Members of the Committee on Medical Economics knew that a course on Practical Economics was being given to the dentists of the State by

the Extension Division Department of Post-Graduate Medical and Dental Study of the University of Oklahoma. Your Chairman discussed with Mr. L. W. Kibler, Director of Post-Graduate Study, the feasibility of offering this course to the medical profession.

Following this discussion, the first thing necessary was to know if such a course could be applied to the medical profession. To determine this, the Extension Department conducted a survey. Their field workers went into several of the doctors' offices in various points throughout the state. Results of this survey and reports from the doctors whose offices were visited, thoroughly indicates that not only is a course applicable, but highly desirable. The Councilors of the state have been informed of this survey and the results, and this matter will be presented to them at their next meeting. From the knowledge your Chairman has of this work, it is hoped that one of the several plans suggested will be adopted by the Councilors, so that the members of the Oklahoma State Medical Association may have the benefit of this course.

Among the other things studied by the Committee are: (1) Cost of Medical care; (2) Group practice; (3) Charity Clinics. One of the serious problems considered by the Committee is the piling-on to the medical profession of semi-charity and charity cases.

In these times of lessened income and increased taxes, "Economics" to the medical man has become "Practical Economy." Just as we have learned better medical treatment, so we must learn better economy. We cannot improve the financial status of our patients, but we can be more business-like in our financial relations to them. If you go into a store to buy a suit of clothes you either pay cash for it or you establish a credit. But when new patients come to you for examination and treatment you assume that they are alright and permit them to leave the office without even asking them for your fee or making any arrangement with them about their payment of it. This may be a grand professional idea, but its a very poor business procedure.

We are becoming more and more convinced that the doctors are "boobs" to be imposed upon. We are called upon entirely too much to donate our services, whether it be for the Catholic Clinic, the Y. M. C. A., the Boy Scouts, the County Clinic, The Jewish Charities, "and what have you," and then treat all charity patients free. No one doctor wants to make himself the goat and oppose these things, but it is the duty of the Committee to unite the profession as a whole against this unjust burden.

Let the County Commissioners of the State assume the financial responsibility and pay for it from the taxes of the community. We cannot see any more reason why a doctor should be asked or expected to give his services free in these cases than the County Judge or Commissioners should serve without a salary. It is strictly "uneconomic." It is absolutely "incompatible." Not only do other people expect us to do this, but the patients themselves almost demand it. They call us at any hour of the day or night and often are highly indignant if we inquire about their ability to pay. We see no great breach of professional ethics in a doctor being wise enough to introduce a little business principle in his profession. If we did not have this demand made on our time and services, then we could afford to do our work

at a smaller fee and some of this howl about the "high cost of medical care" to the middle class would be stopped. If it were the customary thing for the poor of the community to call up the various grocers and have their food supplies sent out and not pay for them, everyone else would soon find that the cost of their own groceries was increasing to make up for the added loss to the grocer.

Some may call it a disgrace that our noble profession must become so commercialized, but it would be a far healthier condition and a much more comfortable atmosphere for all concerned, if all of us would study and put into practice "Better Business Methods."

WM.-H. BAILEY,  
J. HUTCHINGS WHITE,  
A. RAY WILEY, Chairman.

#### REPORT OF COMMITTEE ON CANCER STUDY AND CONTROL

The past year has been marked by no unusual or startling discoveries in the field of cancer. The average number of specific cures have been announced through the public press, though like the thousands of preceding remedies, including the much heralded glandular extract of two years ago, they have slowly faded under the penetrating light of scientific analyses and proper case control. Research laboratories throughout the world have made excellent progress during the past few years, more especially in their studies of the behavior of the cancer cells cultivated outside the body; whereas, in former years their time was largely devoted to the testing of some recently announced cancer cure.

Two recent announcements from research laboratories are worthy of mention: From the University of Illinois there comes a report of experiments with intravenous injections of selenium into cancerous mice. This chemical element was tried in the treatment of cancer some years ago, and for a while gave considerable encouragement, though unfortunately the host as well as the cancer usually succumbed to the treatment. It is reported that in their recent experiments they have rendered this electro sensitive element less toxic to the patient.

Other recent research work which may prove of value in diagnosis as well as treatment of metastatic cancer comes from Tulane University. It consists of injections of a solution of thorium into the lymph glandular system, after which the glands become visible when examined with the X-ray. Thorium is an element related to radium and will emit secondary radiation when acted upon by radium and X-ray. It is therefore hoped that by this method of intralymph injection, not only will metastatic malignancies become visible but also they may become more successfully radiated, when acted upon by radium and X-ray.

Your state cancer committee, cooperating with the State Committee of the American Society for the Control of Cancer, has, during the past year, distributed more than two thousand booklets edited by the American Society for the Control of Cancer.

During the month of March, a series of six specially prepared and thoroughly censored lectures upon cancer was broadcast over University Radio Station WNAD by various members of our



State University Medical Society. These lectures have stimulated wide interest, even beyond our expectation, in requests for more information and literature. Other state university radio stations have also asked for copies of these lectures that they might likewise institute a similar cancer educational program. It has been suggested that perhaps cancer education should be carried into our colleges and high schools, as well as before public gatherings of adults. It is believed by many that by giving such information to the younger generation, more successful cooperation and results may be accomplished.

It is interesting to note that during the last five years, since better state statistics are available, the death rate from cancer in Oklahoma is decreasing at the rate of about forty cases per year. This in the face of better diagnosis and more complete reporting of vital statistics is indeed gratifying, and should cause us to take courage and go forward.

Our state has twice during the past year been visited by a field representative, Doctor Cox, of the American Society for the Control of Cancer. The prime object of such visits was to discuss the possibility of organizing state cancer diagnostic clinics. Such diagnostic clinics have been accomplishing a great deal of good in other states. More recently, a field representative of the American College of Surgeons paid a visit to our state with the same object in view.

Doctor Newquist, representative of the American College of Surgeons, after making a brief survey, urged that a diagnostic clinic should be established at once in connection with our State University Hospital and Medical School. Such a clinic is now established at our State University Hospital and is beginning to function. It is anticipated that other like cancer specialists in the various branches could be organized into a cooperative staff.

Your committee has been handicapped by the lack of funds to meet the necessary expense of postage, express, and other incidentals in the distribution of printed booklets and other literature which have been furnished without charge by the American Society for the Control of Cancer. We believe that our state association might well afford to appropriate not less than one hundred dollars to take care of such necessary incidental expenses, which have thus far been met by individual physicians.

At the suggestion of the American Society for the Control of Cancer, we are recommending that the chairman of our Committee of Cancer Control of our state association should not any longer be one and the same physician as the one who is state chairman of the American Society for the Control of Cancer, though it may be advisable for such physician to be a member also of the State Committee. The wisdom of this policy is obvious, since by two separate cooperating committees a larger educational program may be instituted.

EVERETT S. LAIN, M.D., Chairman,  
FRANK H. MCGREGOR, MD.,  
JAMES STEVENSON, M.D.

#### REPORT OF THE COMMITTEE ON INDUSTRIAL AND CONTRACT PRACTICE

Since the meeting of the Association in 1931, there has been very little change in the situation as to industrial and contract practice in the State

of Oklahoma, except those changes brought about by the general economic condition of the country.

There has been a marked falling off of industrial practice throughout the state due to curtailment of industry generally and there is a tendency on the part of many employers because of the liberality of awards by the Industrial Commission, to scrutinize their potential employees much more closely than heretofore, with the result that particularly corporations are much more careful as to the physical condition of the men they employ.

No new serious attempts at contract practice have come to the attention of the Committee in the past year. It seems as though the present depression has had a rather marked deterrent effect upon such undertakings. In those places where such practices have been initiated in the past, the organized profession has taken the stand that it is unalterably opposed to the commercialization of the profession by laymen and the Committee feels that the Association should be very jealous of this position and do everything in its power to keep the profession out of political domination by lay employment of the contract type wherever possible.

PAT FITE, Chairman,  
C. E. CLYMER,  
A. RAY WILEY.

#### ANNUAL REPORT of the SECRETARY-TREASURER-EDITOR May 1, 1931 to April 30, 1932

*To Members of the Oklahoma State Medical Association:*

In conformity with the Constitution and By-Laws, I hereby submit the report of my work of the past year.

Detailed statements of all activities, financial transactions, duplicate deposit certificates and other business have been submitted to the Council for their audit.

*Membership:* On April 30, 1931, we had 1602; on this date we have 1502. Naturally we have lost some of our membership, due to the depression, and this also applies to advertising matter.

*Deaths of Physicians:* Since our last meeting the following deaths have been reported. All of these were either members at the time of their death or had been members prior to that:

Dr. B. F. Applewhite, Tecumseh.  
Dr. J. B. Beckett, Spiro.  
Dr. Walter C. Bradford, Shawnee.  
Dr. E. C. Byram, Okmulgee.  
Dr. C. H. Day, Pawhuska.  
Dr. P. A. Edwards, Nardin.  
Dr. E. S. Gooch, Lawton.  
Dr. E. J. Gray, Tecumseh.  
Dr. A. L. Gregory, Muskogee.

Dr. Alfred Griffith, McAlester.  
 Dr. Robert H. Henry, Ardmore.  
 Dr. Jefferson D. Kiser, Bartlesville.  
 Dr. J. W. Marshall, Shawnee.  
 Dr. Wilbur E. Rammel, Bartlesville.  
 Dr. W. H. Rogers, Tulsa.  
 Dr. J. D. Scott, Holdenville.  
 Dr. J. C. Stephenson, Oklahoma City.  
 Dr. A. L. Stocks, Muskogee.  
 Dr. Charles K. Tillison, Bartlesville.  
 Dr. L. W. Troutt, Afton.  
 Dr. J. W. Tucker, Lindsay.  
 Dr. J. B. Wear, Poteau.  
 Dr. A. C. White, Chickasha.  
 Dr. T. F. Wood, Sallisaw.  
 Dr. E. N. Wright, Olney.

*Medical Defense:* The following cases have been settled.

Okmulgee County, No. ....  
 Tulsa County, No. ....  
 Seminole County, No. ....

In addition to these there are pending the following unsettled cases, status unknown:

Carter County, No. 18723.  
 Oklahoma County, No. ....  
 Bryan County, No. ....  
 Ottawa County, No. ....  
 Ottawa County, No. ....  
 Ottawa County, No. ....  
 Tulsa County, No. ....  
 Pottawatomie County, No. ....  
 Kiowa County, No. ....  
 Kiowa County, No. ....  
 Kiowa County, No. ....  
 Okmulgee County, No. ....

*Journal and Advertising:* Considering the depression our Journal has stood up very well. We have received from our advertisers \$6,022.85.

*The Journal:* For the calendar year, 1931, was the exact size of 1930. We believe, however, there has been a great deal of improvement in the reading matter submitted by our authors. Our articles as well as abstracts supplied us by various contributors, compare very favorably with those to be found in very high class journals. It is gratifying to note that many of the articles published in our Journal are given wide notice in various Journals outside of this state.

*Post Graduate Courses:* Since our last meeting we have expended \$1050.00 for Post Graduate Courses, \$350.00 of which was contracted for before our last meeting.

## FINANCIAL STATEMENT

The Oklahoma State Medical Association  
 Dr. C. A. Thompson, Secretary-Treasurer-Editor  
 May 1, 1932.

### Receipts

Advertising, Subscriptions & Exhibits	\$ 6,022.85
County Secretaries	6,144.00
Interest on Liberty Bonds	425.00

Total Receipts	\$12,591.85
Balance cash on hand in bank, May 1, 1931	7,090.23

Total	\$19,682.08
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### Expenditures

Printing Journal	\$ 5,982.90
Office supplies, expense and Misc., Printing	405.16
Office Rent	247.82
Telephone, Telegraph & Press Service	145.22
Treasurer's Bond and Audit of books	150.00
Postage	230.64
Post Graduate course and Movie films	1,482.00
Attorney's Fees, order of council	250.00
Council and Delegates' Expense	1,008.68
Transfer to Medical defense fund	150.00
Expense Okla. City and Tulsa meetings	358.40
Extra Clerical work	51.50
Oltha Shelton, Salary	1,360.00
Dr. C. A. Thompson, Salary to March 31, 1932	2,400.00

Total Expenditures	\$14,222.32
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April 30, 1932, Cash on hand in bank	\$ 5,463.76
Less check No. 3517 outstanding	4.00
	5,459.76

Total	\$19,682.08
May 1, 1932, Cash on hand in The Commercial National Bank, Muskogee, Oklahoma	\$ 5,459.76
U. S. 4th 4¼ Liberty Bonds, in Safe deposit box Commercial National Bank, Muskogee, Oklahoma	7,000.00

Total Cash Assets	\$12,459.76
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## THE MEDICAL DEFENSE FUND

The Oklahoma State Medical Association  
 Dr. C. A. Thompson, Secretary and Treasurer  
 May 1, 1932.

### Receipts

May 1, 1931, Balance Cash on hand in bank	92.73
November 3, 1931, Oklahoma State Medical Association	150.00

Total	\$ 242.73
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### Expenditures

December 2, 1931, Attorney fee, Farr vs Sadler, Okmulgee County	\$ 100.00
January 18, 1932, C. S. Summers, Settlement, Hart vs Wirth, Tulsa Co.	100.00

Total	\$ 200.00
May 1, 1932, Balance Cash on hand	42.73

Total	\$ 242.73
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May 1, 1932, Balance Cash on hand in The Commercial National Bank, Muskogee, Oklahoma .....	\$ 42.73
U. S. 4th 4½ Liberty Bonds in Safe deposit box in The Commercial Na- tional Bank .....	3,000.00
Total Cash Assets, Medical De- fense Fund .....	\$ 3,042.73
May 1, 1932, Total Cash Assets:	
Oklahoma State Medical Ass'n.	\$12,459.76
Medical Defense Fund .....	3,042.73
May 1, 1932, Grand Total Cash Assets	\$15,502.49

Respectfully submitted,

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

(Signed) H. A. LEWIS,  
Auditor.

#### COMMERCIAL NATIONAL BANK

Muskogee, Okla., May 4, 1932.

Dr. C. A. Thompson, Secretary-Treasurer,  
Oklahoma State Medical Association,  
City.

Dear Sir:

This is to certify that according to our records,  
the following accounts had a credit balance, sub-  
ject to check, at the close of business April 30,  
1932:

Oklahoma State Medical Association.....	\$ 5,463.76
Medical Defense Fund .....	42.73

Yours very truly,

A. H. DAVIDSON,  
Cashier.

#### MELORHEOSTOSIS LERI: FLOWING HYPER- OSTOSIS OF SINGLE EXTREMITY: REPORT OF TWO CASES

According to Ernest Kraft, Chicago (Journal A.M.A., Feb. 27, 1932), in 1922 Leri and Joanny described a new type of hyperplastic bone lesion which is confined to a single extremity, extending from one end to the other in a linear track but usually leaving a few unaffected areas along the course. The term "melorheostosis" is derived from the Greek and means "flowing hyperostosis of a limb." The disease is characterized by proliferation of ivory-like new bone in the cortical areas. The lesions may assume different forms in different parts of the extremity, sometimes resembling osteoma, at other times suggestive of spurs, periostosis, calcinosis, or osteoplastic malignant conditions. When the proliferative process has caused considerable expansion, the hyperplastic material is of irregular wavy contour, with numerous hills and valleys, forming a linear track parallel to the long axis of the bone. Leri has likened these irregular masses, running downward from the shoulder or pelvis, to the molten stream of a candle. The sharp localization of the process to one side of a bone was compared by Lewin with a condition in which it rains on one side of the street and not the other. The distribution does not correspond with the course of vessels or peripheral nerves. As the disease advances, pathologic products are

deposited in periarticular areas, occasionally causing complete fixation of a joint. The unaffected parts of bones adjacent or opposite to the hyperostosis frequently show decalcification and rarefaction. There is rarely a bowing of the diseased bones, and, in contrast to other disorders, one finds an extreme compactness of the deformed extremity. Pathologic fracture has never been described in melorheostosis. This feature is characteristic and of importance in differential diagnosis. When the masses assume larger dimensions, pressure on nerves and blood vessels may result in transitory edema, congestion of veins, and neuralgia. Such alarming conditions, however, respond readily to immobilization and tend to disappear in a short time. Tender, indurated erythematous areas are sometimes present on the skin of the affected extremity. The first signs are noted as a rule during childhood or adolescence. Of fourteen cases reported in the literature, the history began after the period of bone development in only four. Since the onset is quite insidious and the progress extremely slow, it is impossible to obtain reliable data as to the first manifestation. One patient was 5 years of age and one, 42 years of age, when symptoms began. Between these two extremes the average age of first complaint is 19 years among twelve patients. The spread between onset and first examination was twenty-nine years in the first two cases. The symptoms, even in advanced cases, may be extremely vague. In children the subjective symptoms are more pronounced than in older persons, although the roentgen observations are not as striking. The first deformities are sometimes accompanied by pain. More often they develop without any symptoms. Invariably the lesions are painful at some stage of their progress. The pain is not intense. It is provoked by strain and pressure and disappears either gradually or suddenly—sometimes for years despite persistent progress of the lesions. The most annoying symptoms are transitory stiffness and limited motion of joints, and the occasional instances of permanent ankylosis. Considering the characteristic features, one may find little difficulty in differentiating the disease from other bone disorders of inflammatory and dysplastic nature. Tuberculous and syphilitic osteitis can be ruled out by history, physical examination and serologic tests. Also malignant neoplasms have to be disregarded in the absence of additional observations. The disease usually shows a very slow progress and may become stationary for years. The prognosis is favorable. There has never been any evidence of a malignant character. These facts should be kept in mind before any radical therapy is attempted. No definite therapeutic achievements have been reported. Because of the meager symptomatology the patients are frequently hesitant in submitting themselves to therapy. Surgical correction is rarely indicated. Relief has been reported from heat and physical therapy. In one of two cases reported by the author an improvement was observed when repeated roentgenograms were taken in one session. One has to keep in mind, however, that spontaneous remission of symptoms is a characteristic feature of the disease. The author calls attention to the fact that it would be instructive to apply radiation therapy systematically. One might then gain a better knowledge of the biology of the abnormal cells and subsequently of the unexplained pathogenesis.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
Henry H. Turner, M.D.  
319 Osler Medical Building, Oklahoma City

**Insulin Agina. Parsonnet, A. E. and Hyman, A. S.**  
*Am. Int. Med.* 4:1247, 1931.

These authors report a series of eighty-nine cases of coronary thrombosis, twenty-two of which had diabetes mellitus. Seven of these had severe anginal symptoms following insulin injections. They believe the shock of sudden lowering of the blood sugar in a heart accustomed to a high blood sugar is responsible for the symptoms. They caution against insulin therapy in coronary disease and state that it should not be used unless all dietary measures fail.

**An Hereditary Anterior-Pituitary Deficiency in the Mouse. Smith, J. E. and MacDowell, E. C.,**  
*Anat. Rec.* 46:249, 1930.

This is a very interesting preliminary report of hereditary dwarfism appearing in a strain of mice reared by these authors.

The other endocrine glands present the same abnormalities as that of hypophysectomized rats. Sections reveal no eosinophiles in the anterior lobe of the pituitary but an abundance of connective tissue. Daily anterior-pituitary transplants in these dwarfs induced a normal body growth.

**Psychiatry and Abnormal Psychology. Arthur Ernest Davies, Brit. J. M. Psychol.** 10:312 (Jan.), 1931. *Abst. Arch. Neur. and Psychiat.* Jan., 1932.

While psychiatry is as ancient as medicine, modern psychiatry has evolved out of medical specialization and has included within its scope phenomena that have been discarded by other specialists. The study of these phenomena has shown that successful treatment of mental disorders demand knowledge and skill not possessed by the general physician. The author uses the term psychiatry in its strict medical sense; namely, the diagnosis and treatment of derangement of behavior with a view to classification. This tendency to create entities that are as well defined as in other and older branches of medicine has given confidence, but it has been misleading. Two types of psychiatrists are described: one group seeking only a neurologic lesion, the other seeking in addition to find mental lesions. Both of these approaches are included under the name of psychiatry. Neurologic psychiatrists start with the assumption of the physical nature of behavior disorders. He studies the traits according to the established principles of other branches of medicine because he argues that since psychiatry is a branch of medicine, it must be governed by the

same principles. The inherent weakness of the neurologic, or the strictly medical, point of view, is that it cannot conceive that a mental disorder has any but a physical basis. Psychologic psychiatrists do not deny that behavior disturbances are conditioned by neurologic lesions; however, they carry to the study and diagnosis of these conditions a point of view that goes beyond the nerve lesion and deals with mental phenomena. These are phenomena which the neurologic psychiatrists place outside the realm of scientific investigation, and hence the psychologic psychiatry is regarded as unscientific.

The author then discusses the basis for the scientific approach, and quotes Hart as describing science as "the term applied to a systematic set of beliefs which have been reached by the application to the object of a particular method, the method that has established physics and chemistry." He shows that when psychologic sciences follow these methods, their results will become as much a part of scientific medicine as are the contributions of neurologic psychiatrists. He points out the need of a well ordered mental pathology that would "compare favorably in extent and thoroughness with that which has placed neurologic psychiatry in its relatively secure position." He shows that the psychologic psychiatrist is in a sounder position from a scientific standpoint because he is not bound down to a consideration of one set of facts, as is the neurologic psychiatrist. He has a broader base on which to build his science and can go beyond the boundaries of the physical sciences to seek the facts that cause sickness of the mental patient. This leads the author to conclude that modern psychiatry should be regarded as a branch of science and not as merely a branch of medicine.

The psychologic psychiatrist works at a greater disadvantage than the neurologic psychiatrist because of the lack of an organized technic. Attempts to make up for this lack have "eventuated in theories of mental disease which, for the most part, have no foundation in a systematic knowledge of normal mental life and which are little more than generalizations that are expressive of the physician's personality rather than of a scientific analysis of the symptoms of the disease." A physician, as a rule, is not oriented in normal psychology. This has led to the building of theories regarding the nature of mental life from the rather intensive observations that have been made on sick people. G. Stanley Hall is quoted as warning that psychoanalysts will be "somewhat too ready to apply their findings to the operations of the normal mind. He implies that the psychoanalytic school of today has not heeded this warning. The author thinks that psychologists must be allowed to work hand in hand with the medical specialists if a more orderly and scientifically established mental pathology is to be built up.



**Treatment of Tetanus by Intrathecal Injection of Carbolic Acid.** S. Suvansa, *Lancet* 1:1075 (May 16), 1931.

This author states that concentrated antitetanic serum is the recognized treatment for tetanus. Its uncertain and often disappointing results induced the author to try phenol. He experimented with different strengths of phenol solution physiologic salt solution and found that a 1:400 solution was the strongest that did not affect the leukocytes. The solution was prepared for treatment by adding 400 c.c. of physiologic solution of sodium chloride to 1 c.c. of liquified phenol which had been sterilized by boiling before use. The dosage given was between 30 and 40 c.m. in adults and between 12 and 20 c.c. in children, but it must be varied according to the individual case. In a series of 14 cases he states that 10 patients which were very severe recovered.

This treatment of course is not without certain complications, such as irritation of the various cranial and spinal nerves, but these particular symptoms were transient. Acute nephritis was present in 3 of his cases; this treatment should therefore not be given to patients with kidney pathology. The author states that the advantages of this treatment are that its action is certain, one injection suffices, and that its only disadvantage is the possible danger in kidney disease.

**Vomiting of Pregnancy. Vestibular Function.** H. Frey and E. Herrmann, *Wien. Klin. Wchnschr.* 43:545 (May 1), 1930. *Abstr. Arch. Neur. and Psychiat.* Jan., 1932.

During the first stage of pregnancy, vomiting is noted in about 50 per cent of cases. Weak irritation of the inner ear causes a change in the position of the eyeballs and the head. Stronger stimulants, such as rotation, swinging and rocking, lead to vomiting and a drop in blood pressure. For these symptoms, vestibule, nerve and central connections are necessary, for it is apparent that vestibular reflexes may be influenced by the central nervous system.

Vestibular caloric tests were made on ninety-one pregnant women, of whom forty-nine were in from the second to the fifth month and forty-two from the eighth to the ninth month. Control tests were also performed on thirty non-pregnant women. Of the forty-nine women in the early stages of pregnancy, 91 per cent showed a more extensive labyrinthine reaction, while of the forty-two in the advanced stage, 69 per cent showed extensive labyrinthine reactions. However, only 43 per cent of the thirty controls showed this reaction. The author concludes that in pregnant women there exists a more pronounced vestibular reaction than in non-pregnant women. This increased capability is more noted in the earlier months of pregnancy, and it is concluded that the central nervous system governing the vestibular apparatus shows an increased irritability.

**Treatment of Meningococcus Meningitis by Cisterna Puncture.** Theodore Goldman and Albert G. Bower, *Am. J. M. Sc.* 181:414 (March) 1931.

These authors present the results of lumbar and cisternal puncture in the treatment of 98 cases of meningococcus meningitis. In the latter a lesser number of punctures and antimeningococcus serum was necessary for recovery. The mortal-

ity of the cisternal method was 27 per cent less than that for the lumbar route. They conclude, of course, that the cisternal method is the one of choice.

**GASTRIC MUCIN IN TREATMENT OF PEPTIC ULCER**

Arthur J. Atkinson, Chicago (*Journal A. M. A.* April 2, 1932), treated forty-five patients with history, signs, symptoms, laboratory evidence and roentgen manifestations of peptic ulcer with mucin. The patients were chosen because all the evidence concurred in the diagnosis. The therapeutic dosage of mucin totaled 90 Gm. a day, but three patients received as much as from 150 to 238 Gm. a day in a study of the effect on the gastric acidity. Ewald, fractional and motor test meals were given, and the stools examined for occult blood. The "acid test" as suggested by Palmer was used at first and later modified to coincide with Hardy's technic. The forty-three patients in the series became symptom-free within an average of 1.7 days. The types of ulcers treated in the series are tabulated. The average duration of ulcer history, which was 5.2 years, indicates the marked chronicity of the ulcer diathesis in this group. Eighteen of the patients were awakened by pain suggesting gastric retention or continued secretion. Thirty-five of the patients in the series had previous medical management, spending a total of 208 weeks in hospitals, an average of 5.9 weeks per patient. All obtained relief on mucin with a total of twenty-five weeks of hospitalization, an average of 0.71 week per patient. Fifteen, having distress while on medical management when first seen, were continued ambulatory and obtained complete relief with mucin. Although any form of therapy may bring about a remission, there is no doubt that remarkable results have been obtained in patients who were previously having distress on dietary or alkali management. The time of observation has been too short to prove that the improvement is permanent in a disease in which the natural history is so variable. The author feels fully justified in believing that mucin treatment is conducive to healing.

**THE BAER MAGGOT TREATMENT OF OSTEOMYELITIS: PRELIMINARY REPORT OF TWENTY-SIX CASES**

Edward Harlan Wilson, Charles A. Doan and David F. Miller, Columbus, Ohio (*Journ. A. M. A.*, April 2, 1932), report that twenty-two of twenty-six children and adult patients, with either acute or chronic osteomyelitis, have been successfully treated with fly larvae during the past eighteen months in the university osteomyelitis clinics. The average healing time for all cases has been ten weeks, for those lesions occurring in children, seven weeks. The type of scar remaining is a distinct improvement in that there is an obliteration of the cavity occasioned by operation and the disease process through the ingrowths of healthy granulation tissue with at least partial restoration of the blood supply. The authors emphasize the fact that the best surgical judgment must always be exercised in the individual case and precede the after-treatment with fly larvae, if satisfactory results are to be obtained.

## COMPLEX OF ECZEMA: DIAGNOSTIC AND ETIOLOGIC ANALYSIS

John H. Stokes, Philadelphia (Journal A. M. A., April 2, 1932), calls attention to the fact that the Germans, able students of the details of pathologic mechanisms, call eczema that form of dermatitis in which the epidermis exhibits an intrinsic quality of hyper-sensitiveness to irritants, specific or general. About 5 per cent of all human beings exhibit this intrinsic hypersensitivity. In order to clarify the field of "eczema" he proposes, for the moment, not to adopt this definition of eczema but to use a broader one, based on the view that all inflammations of the skin exhibit a complex rather than a simple etiology, analyzable on careful study into what might be called predisposing background and exciting causes. He defines an eczema, then, as a persistent dermatitis in which the predisposing causes or background outweigh the immediate cause or causes. The new German concept fits into this scheme as a subhead, for it becomes "eczema allergicum," to coin a phrase, in which epidermal hypersensitivity is the factor that dominates the picture. Thus one may speak of neurogenous eczema, or even neuromycotic eczema, in which an exciting cause such as a yeast infection leads to a dermatitis whose extension and persistence is in part due to the overshadowing influence of the nervous system on the sweat and vasomotor mechanisms, which supplies the background for the yeast growth. Thus "eczema" becomes again a broad etiologic conception, harmonizing with the very wise tendency of dermatology to return to general medical concepts and relations for the full comprehension of its problems. This seems a wiser use of the term than to apply it to single, local or special phenomena, anatomic or functional. The author proposes to speak not of seborrheic eczema, or mycotic eczema, or even of pure allergic eczema (a term of damnation to the Germans), unless the named designation overwhelmingly dominates the picture. Instead, he speaks of these symptomatic pictures as if they were components in a complex and looks at all eczema for the moment in the light of their

interplay. He enumerates ten component factors that make up the etiologic background of "eczema" as commonly understood in American practice thus: (1) the hereditary or familial predisposition factor; (2) the ichthyotic or dry skin factor; (3) the seborrheic habitus or sebaceous dysfunction (oily skin) factor; (4) the pyogenic factor; (5) the mycotic or fungus infection factor; (6) the focal intoxication factor; (7) the metabolic factor with special reference to carbohydrate metabolism; (8) the allergic or hypersensitivity factor, general and specific; (9) the neurogenous factor, and (10) the diathetic state or eczema-asthma-hay fever complex. Distribution tells a surprising amount about an eruption, even before one has clearly identified the elementary lesions or parts of which it is made up. Certain of the foregoing factors have distributions roughly amenable to diagram. By a careful study of the stripped patient, the proportion of these various components taken in connection with the character of the lesions and the landmarks of ichthyosis (which is not a dermatitic state) may be estimated as the basis for diagnosis and treatment. A painstaking study of the patient's history and of familial and hereditary elements further contributes to diagnosis and prognosis. Of especial importance are the ichthyotic, seborrheic and pyogenic trends and the neurogenous and allergic background.

## THE DANGERS OF USING IMPURE MUCIN IN TREATMENT OF PEPTIC ULCERS

Andrew B. Rivers, Frances R. Vanzant and Hiram E. Essex, Rochester, Minn. (Journal A. M. A., April 2, 1932), have demonstrated in certain specimens of commercial mucin the presence of large amounts of a secretagogue which by biologic tests seems to be histamine. The presence of this substance may be looked on as a contaminant which can be avoided if proper methods of preparation are used. Until a consistently standardized, pure product is supplied, it will be impossible to evaluate the therapeutic use of mucin.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, March 8th and 9th, 1932.  
The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Caldwell, Charles Lory	1902	Bolivar, Mo.	Washington Univ.	1928	Chelsea, Okla.
Jones, Clyde Franklin	1901	Shelby, Okla.	Louisville Univ.	1927	Erick, Okla.
Kalbfleisch, E. Leopold		Winston, Mo.	Columbia, N. Y.	1916	Newton, Kan.
Neal, Leroy Jay	1899	Texas	Tulane Med.	1923	Shawnee, Okla.
Sanger, Welborn Ward	1906	Yukon, Okla.	Univ. of Okla.	1931	Yukon, Okla.
Cole, David Frederick		Reedsburg, Wis.	Wisconsin Univ.	1931	Okla. City
Darby, Isaac Kermit (Col.)	1900	Austin, Tex.	Meharry Med.	1929	Houston, Tex.



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# THE JOURNAL

OF THE

## OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXV

MUSKOGEE, OKLAHOMA, JUNE, 1932.

NUMBER 6

### THE DUTY OF THE PHYSICIAN TO HIS PROFESSION\*

R. M. ANDERSON, M.D.  
SHAWNEE

*Mr. Chairman, Members of the Association, Ladies and Gentlemen:*

I sincerely and deeply appreciate the honor you gave me one year ago when you elected me your President. In accepting this honor, I am fully aware of the great responsibility which attends this office, and am going to do my best to hold the confidence you have shown by placing me at your head.

In planning what message to bring to you as your President, I became conscious of the debt that we, as physicians, owe our profession; and with that thought in mind, I could not get away from this title: "The Duty of the Physician to His Profession."

When the student in high school or college realizes that he must make a decision between a business or professional life, he must consider carefully the work for which he is best fitted. If he decides in favor of the medical profession, he should do so with the desire to give the best of his attention to his medical instructions. When a young man chooses a profession second only to the ministry of Christ, it is supposed that he will be so sincere that he will give his best efforts to that profession.

The improved methods of teaching medicine today, are so far in advance of those given by all medical schools of twenty or thirty years ago, that the young man entering this profession has a better opportunity of obtaining a more suitable foundation for any special line of work he may choose. I believe he should be very careful in his work that he may get a thorough knowledge of all the fundamental branches, and while he may decide rather early to specialize, he should not

neglect the other fields in the course of training. It is my opinion that if the teachers will impress these ideas upon their pupils there will not be so many so-called "specialists" who are not fitted to do justice to any special line of work. I well remember the advice Dr. G. C. Savage, our Professor of Ophthalmology at Vanderbilt gave us when we were students there. He said: "You should not think of specializing until you have practiced general medicine for ten years." I am not commenting on the time one should take for a decision, but rather leaving this with you for what it is worth.

As an interne there are many things to keep in mind. In a charity hospital there is danger of losing that finer sense of responsibility which may stand one in hand in a private practice, so one must guard himself, remembering that there is more to consider than just returning a patient to a normal physical condition. There is a great tendency among our internes to be hyper-critical of their attending men, unless the interne has a special liking for one of his teachers; and then it is only natural that he be blind to his ideal's mistakes. It would be well if our students could be taught that anything but constructive criticism of their fellow students and attending men is detrimental to the welfare of the profession in general. Due to the great cost of medical education, many of our young doctors find themselves badly in debt on leaving their internship, and there is a great temptation for them to enter into an unethical practice in order to gain an immediate greater financial remuneration. Even more unfortunate is the case in which a young doctor is hastened into this unethical practice by the attitude and actions of his older fellow physicians.

Loyalty to the traditions of medicine is the first duty of every physician because those traditions represent the best thought of an earnest and mighty profession. They have come to us through the precepts and examples of our predecessors over a period

\*President's Address, Fortieth Annual Session Oklahoma State Medical Association, Tulsa, May 25, 1932.

of twenty-four centuries. They did not come to us from cults or sects because those who bequeathed them were neither cultists nor sectarians—they were simply members of the regular medical profession. We do not receive them as members of a cult or sect, because we, like our forefathers in medicine, are neither cultists nor sectarians—we are not even allopaths, that name being gratuitously bestowed upon us by a group of sectarians—we are simply members of the regular medical profession.

Now, what does this mean? It means that medicine is progressive. It means the difference between the untrammelled exercise of the human mind, on our part, against the circumscribed mental activity of those who are controlled by arbitrary, fixed, and often foolish dogmas. The physician should be loyal to his profession because it is progressive. It is realized too little that the legitimate activities of regular medicine have no metes and bounds except the metes and bounds of demonstrable truth. We are not hedged about by philosophical hypotheses, but stimulated and guided by the results of intelligent investigation. Because we honor those who have gone before us does not mean that we should not advance. On the contrary, we would not be consistent if we did not advance.

We have respect and admiration for those who have lived in other times, and who have done the best they could with the lights before them, but we do not hesitate to displace the faulty teaching of even a patriarch when investigation has shown that it was faulty teaching. Celsus and Galen, Albucasis and Avicenna, and Guy de Chauliac were powerful men in medicine. The names of all of them are cherished because they were progressive leaders, but in the times in which they lived there was no systematized knowledge of human anatomy; no correct notion about physiology; no familiarity with the circulation of the blood; no conception of the bacterial causation of disease. We honor their memories because of their efforts in the uncertain and distant past, but all their teachings we do not follow.

And there were many others in more modern times who did their part—a part of much more importance than fell to the lot of those before them, and yet they did not dream of the fruition of ceaseless progress as we know it today. Ambroise Pare, Wm. Harvey, Wirsung, Glisson, Syden-

ham, Malpighi, Nuck, Poupart, Boerhaave, Von Haller—illustrious names, all of them; great physicians, every one of them, and yet not one of them dared to say that medicine had reached perfection in his time.

But we may mentally leap forward and come to periods still nearer our time—periods in which lived such stalwart members of the profession as Percival Pott, the Hunters and Jenner; the period in which the medical world was electrified by the brilliant Bichat and the great Laennec; the period of pioneer medicine in the United States, represented by such members of the profession as Benjamin Rush and Ephraim McDowell. Wonderful periods in the progress of medicine! Wonderful representatives of our profession! And yet no one of them knew about the priceless heritage that was to come to the profession and to humanity through the unselfish labors of the indefatigable Claude Bernard and the immortal Louis Pasteur.

In medicine, as in all things else, progress is due to science, because science is simply a name for the process through which facts are discovered and assembled in a proper way. When the facts are discovered and assembled there is scientific proof and then we must be willing to relinquish any conflicting opinion. We must give up our fondest hobby, if need be; if need be, we must turn our faces about and go in another direction. With this conception of the duty of the physician to his profession, we say to everyone in the forceful language of Emerson: "Speak what you think today in words as hard as cannon balls and tomorrow speak what tomorrow thinks in hard words again, though it contradict everything you said today."

But there is one lesson that the fathers in medicine taught that is as sound today as it was in the beginning, and that is the altruism of the profession—the disinterested benevolence through which help is carried to unfortunate humanity. In my judgment, that does not mean that the physician should not be paid for the service he renders, provided the patient is able to pay; but it does mean that no necessary service should be denied those who are sick, regardless of their ability to pay. After deliberate reflection, I believe that commercialism is the greatest menace that medicine faces today. There is an increasing tendency for the medical man to measure his success by the money he makes,



rather than by commendable professional accomplishments. While the making of money is necessary, it should not be the prime purpose of the right thinking physician. Beyond question, he should make money, and in order to do that he has only to be prepared to render valuable service. Under ordinary circumstances, if one is a good citizen, professionally capable, kind to the poor, active, alert and industrious, there is no question about a livelihood.

The physician, if he does his duty, will concentrate his efforts upon his professional work. He should not permit outside interests to encroach upon his professional duties. If he is of average intellectual ability, that means that he will have to devote a great deal of time to study and investigation. Medicine is more exacting, and no one, regardless of how brilliant he may be, can properly represent the profession without diligent study of the problems he must consider in his daily work. The physician, like his profession, should be progressive. I do not mean by that, that he should necessarily make discoveries of things not already included in medical knowledge. I mean that he should by industrious application discover for himself in the great storehouse of recorded professional knowledge, truths that he did not know. I mean that each day he should be a better physician than he was the day before.

These things to which I have called attention represent some of the important tenets of the medical profession, and, as I understand it, we, as members of the profession should be governed by them. It is not enough for us to subscribe to them from the teeth out, but we should, I repeat, be governed by them. Take for example, the question of the cults. If the cults have not contributed to the good of humanity, then, surely, we do not owe them anything. If the cults have not only failed to contribute to the good of humanity, but antagonize the regular medical profession in its efforts to help humanity, then it becomes our duty as members of the regular profession to refuse to have any professional relations with them. That, surely, is the very least thing that we could do and preserve our professional self respect. If this is true, the physician who, as a matter of expediency, gives comfort and support and at least quasi-endorsement to the cults by having professional relations with them is, in my judgment, an apostate to his profession. He

not only is not doing his duty to the profession, but he is a traitor to its traditions, its aspirations and its principles.

As I see it, these duties of safeguarding the principles of the profession are incumbent upon every one of us who has been honored with its privileges and charged with its responsibilities. But they are doubly incumbent upon those who temporarily or permanently, are placed in positions where they are looked upon as leaders in professional activities. If, at any time, we find ourselves in a position where we should take a stand against the cultist, we must do it and be true to our profession. The cult opposes the fundamentals of our profession. It opposes vaccination against small-pox. It opposes antitoxin for diphtheria. It opposes the doctrine that pathogenic germs produce disease.

It is unfortunate that many of our medical schools are politically controlled and the affiliated hospital managements are subject to change to suit the complexion of the moment. Usually these changes are detrimental to the institution and can only result disastrously to medical education. The American Medical Association and the American College of Surgeons have laid down certain requirements for both schools and hospitals. This only occurred after years of study and they should not lightly be abrogated.

Only the vicious or grossly ignorant can claim that the cultists have added a year to the longevity of the race or added anything material to industrial or economic progress. Can a partisan to osteopathy, chiropractic or what have you, point with pride to a feat comparable to the building of the Panama Canal, which every school boy knows was the result of improved sanitation? Can any of the cults designate one of their rank who compares with Reed, Carroll, Lazear and Agramonte? To a Carrel, a Banting, or a host of others living and dead, who have contributed materially to human health and happiness? Within the past decade and a half, we have seen typhoid become an exceedingly rare disease in most localities. We need only to point to the comparative morbidity of the world war soldiers as contrasted with the Spanish American conflict. Do the cultists claim any credit for this miraculous improvement?

Of course, we should clean our own house first. We should eliminate from our societies and hospital staffs those "wolves

in sheeps' clothing" who all too frequently infest our ranks. It is only by unceasing vigilance that this may be accomplished and organized medicine must exert its utmost care or we will be corrupted from within. It appears to me that we should "pluck the beam from our own eyes first," and when this is thoroughly accomplished then the mote in the eyes of others will be comparatively easily dealt with.

I have often pondered over the triumphs of medicine as compared with the other arts and sciences. Cellini has had the plaudits of the multitude for over four-hundred years. Caruso attained his highest success before the foot-lights with a vast audience, who broke into rapturous applause under the spell of his golden voice. But what of the physician? From the cottage at midnight when some crisis in a child's life has passed, or from the operating room where some unusually difficult surgical feat has been accomplished, or from the laboratory where research has been completed he emerges triumphant—and what audience applauds his success? An anxious mother, a nurse or two, and a few assistants. And what is his reward? The satisfaction which comes from the fact that his skill has relieved a sufferer or that his research has led to a discovery by which humanity will be benefited.

If the physician is the right kind of human being, he can become a great power for the good of humanity. If he understands his duty to the profession, he will stand with granite determination to protect its traditions and its altruistic interests. He will have faith in God and will be governed by the truth. He will be a harbinger of the blessings yet to come.

#### CHORIONEPITHELIOMA OF UTERUS: REPORT OF CURE IN YOUNG WOMAN PRESENTING EXTENSIVE METASTASES

Julius E. Lackner and M. L. Leventhal, Chicago (Journal A. M. A., April 2, 1932), report a case of chorionepithelioma of the uterus for two reasons: first, to record a case of this condition in an exceptionally young woman (aged 19) which though microscopically falling into Ewing's classification of choriocarcinoma with extensive metastases nevertheless was successfully cured by hysterectomy and roentgen therapy; and, secondly, to demonstrate the pitfalls in diagnosis, prognosis and treatment which attend chorionic tumors. On the basis of their observations in this case the authors conclude that the microscopic picture of chorionepithelioma is not always a true prognostic index of the disease and that radical surgery plus irradiation offers the best results in the treatment of malignant chorionepithelioma.

#### SOME PRELIMINARY OBSERVATIONS OF "BACTERIOPHAGE"\*

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Definition: "A Bacteriophage is an ultra microscopic filter passing organism or virus that multiplies upon the young, virulent, growing pathogenic organisms."

Most discoveries have their roots deep in the past. In 1896 Hankin published a paper in the *Annals de l'Institute Pasteur* in which he drew attention to the notable bacteriocidal properties of certain Indian river waters. He found that the Jumna, just below Agra, contained over 100,000 organisms per cubic centimeter, but that five kilometers further down the river only contained 90,100 organisms in the same bulk. On further investigation it was found that the filtered water exerted a marked lethal action upon the cholera vibrio in the test tube, an effect which was abolished by boiling. Hankin attributed this to a volatile substance which he failed to isolate and his observations remained lonely and unexplained until brought into light again by d'Herelle.

In 1917 d'Herelle made the fundamental observation which led to the discovery of the bacteriophage, about the phenomena concerning which an enormous mass of literature is now assembled. Working at the Institute Pasteur, d'Herelle discovered in sterile filtrates from the stools of a patient suffering from Shiga dysentery, a substance which inhibited the development of these organisms in broth cultures under certain conditions, destroyed them. If, for example, a few drops of such a faecal filtrate, active in this manner, were introduced into a young broth culture of B. Dysenteric Shiga, in which the clouding of bacillary growth was just beginning to appear and the mixture were further incubated, the result was not the usual and progressive increase in the turbidity of the culture but a gradual clearing, and after twelve to twenty-four hours all trace of bacillary growth had disappeared. The bacilli were no longer detectable and, according to d'Herelle's early statements, were completely killed off.

The striking and unique feature about this phenomenon and one outside the realm of previous experience, was that the

\*Chairman's Address, Section on Eye, Ear, Nose and Throat, delivered at Annual Meeting Oklahoma State Medical Association, Tulsa, May 24, 25, 26, 1932.



lysis was found to be transmittable in series, ad infinitum, without any exhaustion of the lytic principle. At the end of such an experiment the principle could be separated off by filtration and the resulting sterile filtrate used to start the lysis of a second bacterial culture. This was an entirely new phenomenon in bacteriology—quite different from any form of bacterial destruction hitherto observed. d'Herelle quickly proclaimed it to be brought about by an ultramicroscopic living virus, a parasite of the bacteria, which underwent multiplication in the culture whose dissolution it caused. In his view these solutions were in effect cultures of the virus, to which he gave the name of Bacteriophagium Intestinale. Such a position he has maintained unmodified, in the face of a great deal of opposition, up to the present time.

A second method of showing bacteriophagic activity and a very important one for the detailed study of the phenomenon, is that devised by d'Herelle for its demonstration in surface cultures. d'Herelle found that if a very small quantity of a lytic filtrate or of a lysed culture such as we have just described, were added to a young broth culture of the Shiga Bacillus and subcultures upon agar made from the mixture at regular intervals. Then, at a certain period of their interaction the result obtained was a surface growth of the bacillus on the agar which showed sharply punched out clear areas which were devoid of organisms. These areas d'Herelle claimed to be "colonies" of the bacteriophage and from this experiment he devised a technique by which he considers it possible to estimate the number of bacteriophagic units in any given fluid. The method is also available for the demonstration of a feeble bacteriophagic action, which would be too slight to be detected by the visible lysis of a broth culture.

Such, in the barest outline, are the fundamental experiments upon which all the work and theories which the subject has called forth are founded. These are accepted facts and without dispute.

Numerous theories are advanced, the chief of which are as follows:

1. For d'Herelle, the bacteriophage is a living microorganism, the obligatory parasite of the bacteria. This is in contradistinction to those who favor the hypothesis of a ferment substance. It is evident that a simple ferment action cannot be the solution, since the material is reproduced

on each occasion of its action and is therefore inexhaustible.

2. The theory of autolytic ferments is more plausible than that of a simple ferment action—the view being that these once introduced, set going an autolytic process in the bacteria which result in their dissolution and a freeing of a lytic substance from their interior. In this way the process may be carried on indefinitely. There are other theories very similar to the preceding but are rather technical in description and will be left for a more complete discussion of this subject.

At the present time it is impossible to conclude as to the nature of the bacteriophage; however, the subject is of intense interest and far reaching in its possibilities.

#### GENERAL CHARACTERISTICS

These are varied and extraordinary. The principle is non-specific and its action may be exerted upon a number of bacterial species—*e. g.*, a given phage may have a powerful dissolving action upon a certain bacillus—a moderate one upon another and slight upon the third, while the intensity with which another strain affects the same organisms may be conversely.

The virulence of a bacteriophage may be enhanced by repeated transfers in broth culture. Clear fluids which result from lysis are regarded by d'Herelle as a pure culture of the bacteriophage. Living cultures are necessary for this purpose as there is no bacteriophagic action on dead bacilli.

#### ISOLATION AND DISTRIBUTION

It has been isolated from faeces, found in water and soil, in sewage, urine, pus, trypsin, peptone, etc. It is always found in association with living bacteria. Its isolation may be effected by filtering the homogenised material thru bacterial filters or by repeated heating to 56 to 58 degrees C. Hadley states that it may in certain cases be obtained by the simple procedure of growing an organism in its own filtrate over fourteen to twenty generations.

#### PHYSICAL AND OTHER PROPERTIES

The action of the lytic agent is only exerted on the young, actively growing cultures. This takes place over a wide range but is most active just on the alkaline side of neutrality. Acidity of the media has a deterrent effect upon the process. It is filtrable thru the whole range of Pasteur-

Chamberland filters. In general it may be stated that its activity persists over a number of years. The lytic material is, however, rendered completely inert by exposure to a temperature of 75 degrees for thirty minutes. Its activity is rapidly destroyed by ultra-violet light although it shows considerable resistance to chemical substances.

#### EFFECTS UPON BACTERIA

The first result of the contact between the bacterium and the bacteriophage is the absorption or adsorption of the bacteriophage by the bacterium. This combination may take place at low temperatures without lysis—however, lysis rapidly takes place when the temperature is raised. The bacteria seem to swell and become spherical—suddenly they burst and disappear in a cloud of granules.

In the case of marked activity all of the bacteria may be destroyed but it more commonly happens that some of the organisms survive and if incubation be continued growth reappears after an interval of a few days. Such growths are called secondary or sub-cultures. These bacteria in the sub-cultures are probably strains that are merely resistant to lysis, or strains which, while themselves resistant, have incorporated the lytic principle. Such cultures are capable of imitating lysis in growth of ordinary bacteria. This lysogenic characteristic is seldom permanent and by repeated cultivations the original type is reproduced by elimination of the bacteriophage. As an illustration of the complexity of the subject, it may be mentioned that several investigators have found that the resistant strains which they obtained of certain bacilli were avirulent, whereas the sensitive strains were pathogenic to a high degree, a result in direct contradiction to the theory of others.

#### THE BACTERIOPHAGE IN INFECTIONS

The bacteriophage is unquestionably a factor in the prevention and recovery in infectious diseases, in that it parasitizes the bacteria, causing their death and completely lysing the bacterial cell. Since its discovery a vast amount of literature has accumulated relative to its therapeutic value. "Larkin and Pratt" in the treatment of general furunculosis in sixty-six cases, report favorable results in sixty-five with no recurrences. Dolsace was able to show lytic action or susceptibility of organisms present to an active lytic agent were those strains that resisted the ordinary forms of treatment. Albee, Mc-

Kinley and many others have reported many cases successfully treated.

Our interest in this subject lies in the hope it will offer a means of subduing bacterial flora in the upper respiratory tract.

Many of us have pet theories as to the prevention and treatment of these conditions but no one has as yet presented an entirely satisfactory method. The respiratory tract is a normal habitat for organisms of all types and is histologically the same throughout, so that it should be considered more or less as an entity in the treatment of infections.

We desire to report the following cases for your consideration:

Fifteen cases of acute otitis media (apparently early stage of purulent formation) where the tympanic membrane was inflamed and beginning to bulge, together with severe pain and other symptoms of acute middle ear infection. Twelve of these were in children and three in adults. In all instances but one the pain was relieved in a few minutes and did not reoccur. One case did not respond and a paracentesis was done after one hour trial of bacteriophage without immediate results.

Cases showing marked bulging of the tympanic membrane were not so treated. Five cases of chronic maxillary sinusitis with an improvement in those which were not known to have antral polypi or granulations. Two cases were bilateral in which one side improved and the other side which contained polypi did not improve.

Ten cases of furunculosis of the external auditory canal with more or less general otitis externa with favorable results in all.

Several cases of acute rhinitis with apparent improvement in practically all. Two cases of chronic lung abscess with a distinct improvement in one.

One case of asthma with bronchiectasis was markedly improved.

We report these few cases that have been treated and observed over a period of a few months for your consideration and with the hope that you will give this more or less new and untried method a trial.

We have used both the stock and specifically autolysed bacteriophage with equal results as far as we could determine. The stock preparation used was the staphy-



lococcus, streptococcus and mixed lysate of Eli Lilly and Company, used mostly in liquid form except in the case of furunculosis of the external canal where we used the jelly form.

It is theoretically sound to expect the bacteriophage with its lytic properties to invade and permeate all the superficial tissues, coming in intimate contact with the bacteria, thereby, exerting its lytic principles and producing disassociation of the bacteria.

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#### ACUTE STAPHYLOCOCCAL INFECTIONS OF KIDNEY: THEIR CLINICAL ASPECTS AND TREATMENT

Reed M. Nesbit, Ann Arbor, Mich. (Journal A.M.A., Feb. 27, 1932), discusses a series of forty-eight cases of acute staphylococcal kidney infection observed and treated at the University Hospital during the past three years. On the basis of his observations he draws the following conclusions: Acute staphylococcal infections of the kidney are relatively common. They are hematogenous in origin, a recognizable focus generally being present. The parenchymatous lesion is characteristically cortical in its location and shows a marked tendency to heal promptly and completely. Costovertebral pain and tenderness are constant. Examination of the stained urinary sediment is essential in all suspected cases. The disease tends to run a stormy though self-limiting course, ending in complete recovery. Surgical treatment should be employed only in cases in which complications develop, of which perinephric abscess is the most common.

#### SOFT CURD MILK

Recent interest in soft curd milks has turned more attention to the kinds of curds formed in the stomach of the infant by cows' milk and modified formulas.

A synopsis of the work done up to the present time has been made by Professor R. M. Washburn in an article entitled "Soft Curd Milk" published in the December, 1931 number of "The Milk Dealer." He points out that according to one series of tests, the lowest values for soft curd milk range from 14 to 34; the average from 53 to 69; and the highest from 107 to 116.

Even these lowest values for cows' milk are very high compared with human milk which shows a curd tension in the neighborhood of zero, as does also S.M.A.

It is gratifying to officials of S.M.A. Corporation to note that more attention is now being given to the characteristics of the curds. In 1921, when S.M.A. was offered in response to the demand of physicians, there was not the general understanding of the importance of the fact that S.M.A. forms soft curds very similar to breast milk.

#### IMMUNIZATION AGAINST DIPHTHERIA WITH TOXOID IN PRIVATE PRACTICE\*

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The prevention of diphtheria by immunization is long past the experimental stage. Its usefulness has been proved by communities the world over. It has been accepted so generally by the profession that at the recent conference on Child Health and Protection, a questionnaire revealed that only one out of a hundred practitioners did not believe in immunization.

That every child should receive the necessary immunization is, of course, the most important part of the program so far as public health is concerned. I believe that this procedure should rest with the family physician rather than the health authorities, now that the public is sufficiently educated to its necessity.

At the present time there are three methods in use for active immunization, with modifications of each: toxin nearly neutralized with anti-toxin produced in horses; toxin nearly neutralized with anti-toxin produced in goats or sheep; and toxin modified by exposure to heat and a little formalin, so that it becomes practically free from toxic action. This latter toxin, a comparatively new product, was first observed by Ramon of France in 1924, to have a greater immunization power than TAT, as well as being free from toxicity and serum proteins. Just recently, a fourth product, a paste to be applied subcutaneously, has been produced and is still in the experimental stage.

The toxin, modified by heat and formalin, is being produced by the commercial houses for use among practitioners and is called "Toxoid" or "Anatoxin-Ramon." It is prepared by growing a virulent strain of the diphtheria bacillus in broth, which does not contain horse meat, to eliminate the possibility of sensitivity to horse protein. At the end of a week this material is filtered and tested for its toxic value. Federal regulation requires that the toxin from which "Toxoid" is made should have a certain standard strength, which is determined by its flocculation unit with a standard anti-toxin. After the toxin is

\*Chairman's Address of Section on Pediatrics, delivered at Annual Meeting Oklahoma State Medical Association, Tulsa, May 24, 1932.

selected a small amount of U. S. P. formalin, not to exceed 0.4% is added to bring about complete detoxification. This formalized toxin is kept at a temperature of 39 degrees C. and tested at weekly intervals on guinea pigs. The time required for detoxification varies with each lot. Then guinea pigs are injected with the initial human dose and six weeks later they receive five minimal lethal doses of a standard diphtheria toxin. At least 80% of these pigs must survive the test. Toxoid made in this manner, contains approximately 50 times the amount of media and bacterial protein that is present in TAT.

Toxoid was not introduced in the United States until 1930, but has been used in France, England and Canada since 1924. During the epidemics of diphtheria in France in 1924, 1925, and 1926, 300,000 children were immunized with very favorable results, with the toxoid.

Many interesting experiments have been carried on to determine the dosage and the intervals between doses which would give the best results. Ramon reports that during the above mentioned epidemics, vaccinations were done on persons of all ages and in all walks of life. Thousands of children were immunized and the proportion rendered immune with two injections was 90 to 95% and with three injections 97 to 100%. From these investigations Ramon advocates giving three doses approximately three weeks apart of 0.5 c.c., 1.0 c.c., and 1.0 c.c. If the doses are given too close together as one week apart, the production of immunity seemed to be inhibited.

A very long and tedious experiment was performed in the Vienna Leopoldstadter hospital for children in 1927-1928. They found that children who received doses of 0.5 c.c., 1.0 c.c., and 1.0 c.c., seven days apart were rendered 88% immune; those receiving 0.2 c.c., three days apart were 68% immune; those receiving 0.5 c.c., five days apart were 68% immune and those receiving five injections four days apart of 0.2 c.c., were 92% immune. Two years later 71 of the 100 children could be Schick tested again and 50 or 70% were still immune. Some of the children who had received the smaller doses even though they were Schick negative at the time of dismissal had become Schick positive. Also some of those who had received the larger doses and were still Schick positive at the time of dismissal had become Schick negative. None of the children had had diphtheria although many had been exposed.

The results of these experiments lead one to believe that the larger doses given at longer intervals are more efficient and produce a more lasting immunity.

Fuerstman reports a series of 125 children, all Schick positive reactors from 4 to 6 years of age. He gave two doses of 1 c.c., each at intervals of three weeks. He followed with a similar group giving them three injections of TAT of 1 c.c. each at weekly intervals. Retesting both groups six weeks after the last injection gave the following results:

	TAT	Toxoid
Number treated	125	125
Number positive	18	8
Number negative	107	117

The toxoid gave much better results.

Now I will present a series from my own private practice. After reviewing literature, I decided to give three doses of 1 c. c. each of the toxoid, three weeks apart instead of the usual two doses. I have given 736 children toxoid since October, 1930. Of these, 263 have returned for the Schick test, which I advise giving about six weeks after the last dose. Out of these 263, 254 or 97% Schick tested negative and only 9 positive. During the same period, I gave 119 older children TAT, three doses one week apart. Fifty-three of these have returned for the Schick test, which I give six months after the last dose. Of these 53, 35 or 66% were Schick negative. These series show a decided advantage to toxoid for immunizing young children.

Since October, 1930, I have given the Schick test to 434 children, some of whom had received serum previously but the nature of which I am not able to state and some of whom had never had any immunization. It might be well to remind you of the delicacy of the Schick test. If it is not properly given and read it is more than useless, for the interpretation may easily be wrong. I always have the children return for readings the third day after the test and if in doubt, again several days after that, for the true positive reaction will persist for a week or two. The majority of these 434 children were from the ages of 6 to 16. Of these, 129 were positive and 234 negative. No comparison can be made between the advantages of toxoid and TAT from this series except the observation that older children, who are not immune, build up an acquired immunity much slower than younger children and



therefore the most ideal time for immunization is during the first 18 months of life. Of these 129 positive Schick test reactors, I gave those seven years and under, 82, toxoid. Thirteen of these have returned for the Schick test and four were still positive. Twenty-two, those over 7 years, received TAT. Three have returned for the Schick test, two being negative and one still positive. From this series you can see the importance of giving the Schick test to all children after the three doses of toxoid or TAT, remembering that there are three in a hundred who are falsely assured of protection.

Observers report many and varied reactions among young and older children to both toxoid and TAT. It has been my experience that children up to seven years tolerate toxoid much better than they do TAT. Several years ago, I had three very severe reactions with TAT. The children were 2, 4½, and 5 years of age. They had an erythema at the site of injection of a deep-red color from 2 to 3 inches in diameter, edema from the finger tips to the shoulder, headache, chills and high temperature lasting forty-eight hours. I have had several reactions from toxoid but none of them severe. One child had nightmares after each dose but no temperature or other discomforts. Another, aged one year, developed a very offensive breath after each dose which lasted about twenty-four hours. Another, two years of age, developed a very severe attack of asthma after a dose of 2-3 c.c., and another sneezed for an hour continuously after each dose. One child, three years old, who had previously had 20,000 units of diphtheria anti-toxin for larngal diphtheria had an anaphylactic shock which was relieved immediately by a hypodermic of 1 c.c. of 1-1,000 solution of adrenalin. These are the only reactions that I have had from giving toxoid to about 800 children.

I do not give toxoid to my allergic patients, preferring to Schick test them and if they are positive to keep them under careful observation and during an epidemic being especially suspicious of a sore throat. This is the same plan I follow with children over ten years as the TAT often gives a very severe reaction due to sensitivity to serum proteins, and the toxoid is decidedly out of the question for older children.

It is contended by many authorities that after immunizing many children the percentage of fatality among cases of diph-

theria is increased. Immunization is in no way responsible for this interesting fact. Some believe we are fighting a more virulent strain of the diphtheria bacillus than previously but it seems to me that only the neglected children are contracting diphtheria and do not receive treatment as early in the disease as is necessary. In my private practice not one child has contracted diphtheria who has had three doses of toxoid and a negative Schick test. In fact only two contracted the disease during the immunization period and these within the first seven days after the first dose. Our City Health Department states that they have not had a single case of diphtheria among children who have had toxoid. All the children except one, which terminated fatally, who had had the TAT had very mild cases. None of these children had had the Schick test which would have shown them not to be protected.

We have always assumed that new-born babies up to six months had a natural immunity to diphtheria. No doubt this is the general rule, but I wish to cite a case I saw this winter. A baby, three weeks old, was sent to me for examination and I only saw it the once. It was suffering from a tonsillar diphtheria which was verified by a positive culture. I advised giving 5,000 units of anti-toxin but the baby died the following morning. It is interesting to note that during the baby's illness another child in the family was suffering from a sore throat.

In conclusion I wish to leave these four points with you:

*First:* The results of my series of giving three doses of toxoid at from three to four weeks intervals in which I received a 97% immunity among children under seven years, warrants giving toxoid in three doses instead of the usual two. The reactions being so slight, with the exception of the allergic child I give the three doses without hesitation.

*Second:* Since it is quite easy to produce a 97% immunity without reaction through the use of toxoid in three doses during infancy, it is imperative that physicians insist upon immunizing the patients under their care.

*Third:* The Schick test, given a sufficient time after the last dose, is necessary and imperative to protect every child from a false feeling of security.

*Fourth:* Do not hesitate to give the anti-toxin in any suspected case of sore throat

with a membrane or croup that is suspicious of a diphtheric origin, even though the patient gives a history of having had toxoid or TAT without a Schick test.

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#### BISMUTH SUBNITRATE IN TREATMENT OF ARTERIOLAR (ESSENTIAL) HYPERTENSION

Although Stieglitz recently reported excellent therapeutic results following the use of bismuth subnitrate in 200 patients with arteriolar (essential) hypertension, David Ayman, Boston (*Journal A. M. A.*, Feb. 13, 1932), obtained unsuccessful results with the drug after its long administration to a small though well studied group of patients with arteriolar hypertension. He presents the chart of one patient which illustrates the method of control and study used for all the patients, and the results obtained. While bismuth subnitrate was taken by the patient for six months, the blood pressure was not affected to the slightest degree demonstrable. On the other hand, it was lowered by thiocyanates; by frequent visits, and by frequent visits plus pink-colored water; at all times it was lowered by sitting rest periods. A similar study of fourteen cases showed absolutely no demonstrable effect of the bismuth subnitrate on the blood pressure.

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#### BENIGN TUMORS OF STOMACH

Bruce C. Lockwood, Detroit (*Journal A. M. A.*, March 19, 1932), gives the relative incidence of benign to malignant growths in the stomach as about 1 to 20, as shown by the records from both operating and autopsy rooms. The percentage of diagnosed cases of benign tumors would be increased by more frequent and more careful fluoroscopic study. The roentgen observations are reasonably characteristic. In order to demonstrate the smaller lesions, the stomach must contain only small quantities of the contrast mixture, the walls must be approximated by manual pressure, and the patient must be examined in both the upright and the prone position. The symptoms are not typical; they vary with the site, size and character of the lesion, and may simulate other forms of indigestion. Because of the tendency of these slowly growing benign tumors to become malignant, their recognition is important and their surgical removal indicated.

#### SOME RECENT HIGH POINTS IN SURGICAL PROGRESS

FRED S. WATSON, M.D.  
OKMULGEE

As chairman of the surgical section, I wish to extend a welcome to our distinguished out of state guests as well as to the members of this association.

In these introductory remarks, I shall touch briefly some of the high points of surgical progress made in the past few years.

When I began to practice surgery fifteen years ago, a fair history of a patient was taken; the heart and lungs were examined with the stethoscope; the urine was tested for albumin and sugar, and sediment observed through the microscope for casts. Today, tests of the blood, kidneys, liver and heart, with the liberal use of the X-ray make it possible to be much more accurate in our decisions as to operability, and to recognize diseases earlier while they are still curable.

During the World war great strides were made in the development of plastic surgery, especially of the face. Burn contractures are being handled with marked success, relieving numerous disabilities which otherwise would have left the individual a hopeless cripple and dependent on charity for his maintenance. Economically this has saved large sums of money, not only for the organizations of charity, but for industries in the way of compensation.

In the treatment of burns great changes have taken place. The mortality rate has been decreased sixty-five per cent, the cost of hospitalization fifty per cent, and the disability seventy-five per cent, to say nothing of the relief of the suffering of these individuals. For example, it was my privilege to treat recently a second degree burn involving forty per cent of the man's body, and to have this patient out of the hospital with all surfaces healed in twenty-one days, and back at his regular work in six weeks. These results were obtained by the use of the newly perfected tannic acid jelly.

Great changes have taken place in abdominal surgery. Early X-ray diagnosis and better preparation of patients has greatly increased the number of cures of cancer in the entire intestinal tract. Surgical treatment of gastric ulcer has grown more radical and that of duodenal ulcer



has become more conservative. Surgery of the gall-bladder has undergone radical changes. Without disease of the common duct and the pancreas, the operation of choice is now cholecystectomy, and the cholecystotomy when these organs are involved. There is no place in surgery where more skillful surgical judgment is required than successfully operating upon the gall-bladder and the common duct.

Womankind has been wonderfully blessed by conservative surgery of the ovaries, tubes, and uterus. Only a few years ago, numerous Caesarean sections were performed on the eclamptic patient. With the conservative treatment now used the mortality rate has decreased and the stormy post-operative period has been eliminated. The office use of the cautery to the eroded cervix has no doubt been of great benefit in preventing cancer in this area. The female organs are no longer operated for every complaint of backache. Instead, our orthopedists are now trained in their methods of procedure to determine the shortened limbs, and curvatures and injuries of the spine, so that they may be corrected by proper shoes, braces, corsets, etc.

Urologists have developed accurate methods of diagnosis and treatment until now they can bring relief to the vast number of persons who suffer from diseases of the genito-urinary tract.

Conservative treatment by the dehydration method has saved the lives of many patients with fractured skulls and concussions, where formerly numerous operations would have been done. The early recognition of the signs and symptoms of brain tumor have permitted these patients to be operated on earlier and more successfully.

In recent years, we have been presented with numerous new types of anesthetics and methods of administering them; so that where ether seems inadvisable the operator can select the anesthetic suitable for each individual patient.

Our hospitals have been improved by better nurses and by being equipped with clinical and X-ray laboratories.

The span of life has been extended some twenty years in the last two decades.

It seems to me that one of the greatest advances that modern surgery has made has been in the changed attitude of the surgeon toward the patient. We no longer operate upon a case of appendicitis, but upon a specific individual who is suffer-

ing with this malady. Each patient must be studied from the mental and financial point of view as well as the physical. It is of vital importance that each person who consults a surgeon shall be considered as a specific individual and treated as such.

I have undertaken to show briefly some of the improvements made in surgery in the last few years. In the papers which follow on our program, we hope to show more specifically, by definite procedures, the progress made in modern surgery.

I wish to take this opportunity, at the beginning of this session, to thank those who have prepared papers and so helped to make this meeting a success.

#### VOLUME OF CIRCULATION AND ITS REGULATION BY VENOPRESSOR MECHANISM

Yandell Henderson, New Haven, Conn. (Journal A. M. A., Oct. 31, 1931), states that the volume of the circulation, or amount of blood pumped each minute by the heart, is about twenty times as large as the volume of oxygen absorbed from the lungs in the same period. In a normal man at rest, it is a stream that is equal each minute to the entire blood volume of the body. It is much larger during physical activity, and much smaller during illness and postoperative depression. Investigations in recent years have yielded knowledge of great general value regarding the circulation in health and disease but not as yet an entirely satisfactory clinical method for measuring its volume. Such a method will afford information as instructive as that now obtained by means of the sphygmomanometer or the electrocardiograph. The factor that chiefly determines the volume of the circulation is the venous return to the right side of the heart. This factor conditions both increase and decrease of the circulation. During physical exercise the heart can pump onward through the lungs and into the arteries only the volume that comes to it through the veins. In illness a failing heart is generally due rather to an inadequate venous return of blood than to depression of the strength of the heart itself. The blood is not merely pushed back to the right side of the heart by the pressure transmitted from the left side of the heart through the arteries and capillaries to the veins; nor is the venous return due in the main to the vasomotor control of the blood vessels. According to the view presented by the author, this vitally important third factor in the circulation is maintained and varied chiefly by quite another force; namely, the general tonus of the musculature of the body. This tonus, by the pressure which it exerts on the tissues and blood within them, and especially on the abdominal viscera, is the force which in health maintains and varies the volume of the venous return. In illness the depression of muscular tonus permits a stagnation of blood in the tissues and a consequent failure of the venous return. Both in health and in illness the general muscular tonus, the volume of the circulation and the activity of respiration are increased and decreased in closely parallel relation and largely by the same influences.

## THE ANTERIOR PITUITARY\*

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The study of the endocrine glands may be traced back to Galen, who first described the pituitary as the "phlegmatic glandule," whose function, he thought, was that of collecting the excrementous slime formed by the brain and passing it on through the "rete mirabile," which was later described by Willis as the vascular circle to the nasal passages.

A few hundred years later, Bordeu gave us our first intimation of an internal secretion, and in 1853 Claud Bernard further stimulated us with his brilliant studies of hepatic glycogen. Brown-Sequard first propounded the theory that each cell secreted a certain substance which might influence other cells independently of the nervous system, and when Shaefer in 1894 demonstrated pressor substances in the pituitary, existence of internal secretory hormones became an established fact.

### ANATOMY OF THE HYPOPHYSIS

The study of the anatomy and histology of the pituitary served as a further stimulus to research into the intricacies of this gland. The hypophysis arises from two unrelated embryological sources. The neural portion, or posterior lobe, develops from the neural tube as an evagination of the brain floor, which also forms the infundibulum and stalk. The epithelial portion, or anterior lobe, is derived from Rathke's pouch, an evagination of the buccal ectoderm or primitive mouth, which later becomes the naso-pharynx. This part finally differentiates further into the pars intermedia and pars tuberalis, and the former becomes intimately related with the posterior lobe, and the latter with the infundibulum and tuber cinereum. Thus it is seen that the two lobes differ greatly in structure and in their embryonic origin. The posterior lobe is composed chiefly of neuroglia cells and intimately connected with the floor of the third ventricle, whilst the anterior lobe is glandular in structure. The only apparent reason for their being classified as a single gland is an anatomical one, due to the fact that they lie in intimate contact with each other in the sella turcica.

The hypophysis is larger in the female than in the male and enlarges during the menstrual period and during pregnancy. It returns to almost normal size after each menstruation and reduces after delivery, but not quite to the pregestational state. It is larger in primiparae than in multiparae and increases with each succeeding pregnancy.

### CLINICAL SYNDROMES

Our knowledge of disease most usually begins with the description of a clinical syndrome, which as time goes on is readily recognized by others and eventually leads to laboratory investigation.

It was Marie who in 1886 first presented a clinical pituitary syndrome, which he termed acromegaly. This syndrome was characterized by skeletal overgrowth, producing transformation of the facial features to a massive, coarse countenance; enlargement of the head, hands, and feet; overgrowth of the lower jaw, with a resulting spacing of the teeth; and a high dorsal kyphosis, resulting in stooping. Exostoses form about the epiphyses and the terminal phalanges assume a mushroom shape; vague pains and aches, lameness and stiffness develop in the bones and joints. Chiasmal pressure signs produced by encroachment of the enlarged pituitary are rather constant. The libido, which is at first generally increased, later is lost, and the patient complains of emotional and mental imbalance. He becomes temperamental, irritable, morose, and in the early stages insomnia is the rule, but later drowsiness and hibernation prevail.

Sometime later pathological gigantism was recognized as a part of this condition, or as a corresponding one, differing in that it began earlier in life before the epiphyses closed.

Later Lorrain-Levi described a type of antuitarism characterized by a certain degree of dwarfism due to underdevelopment of the long bones; hypoplasia of the genitals; and lack of, or delayed, secondary sex characters, evidenced in the female by lack of development of the breasts and appearance of pubic hair, infantile adnexa, and amenorrhea. The skeleton is slender and the skin soft and pale. The shoulders are comparatively large, but this is an accentuation due to the infantile thorax. The epiphyses are normally united. There is no excessive adiposity, but a fullness of the mons veneris is usually

\*Chairman's Address, Fortieth Annual Session, Tulsa, May 24-26, 1932.



present. The voice is high pitched and the mentality is usually very good.

In 1901 Alfred Frohlich described a classical type of adiposo-genitalis, characterized by genital infantilism, marked deposition of fat over the mammae, abdomen, and mons veneris. These children are of average, normal height, or slightly below. They are generally sterile and amenorrhea is usually present in the female. If the disease develops after puberty, there is generally some genital atrophy and retrogression of the secondary sex characters. Certain metabolic changes, such as lowered basal metabolism, increased sugar tolerance, polyuria, and subnormal temperature are usually present. Increased fatigability and increased intracranial pressure symptoms, such as bitemporal or homonymous optic atrophy, epileptic seizures, headaches, deafness, lowered mentality, may occur as a result of pituitary enlargement or neoplasm.

Brissaud's type is very similar to Frohlich's, except that these individuals are not so obese and that their height is generally above the average. They have round, chubby, infantile faces, and the hair is very fine and scanty except for that of the scalp, which is usually abundant. Mental and physical sluggishness is usually present. The genitals are rudimentary and the secondary sex characters are absent.

*The adolescent type.*—This is perhaps the most common type. The onset is about the time of puberty; therefore, the stature is not involved. The facial features are quite normal, but the beard is sparse, and, though the genitals may be of normal size, the secondary sex characters are poorly developed. Mons veneris padding is present, and the distribution of pubic hair is that of the female. The breasts are prominent, the thighs and buttocks are large, and the forearms and legs are small in comparison. These patients are usually very alert, though occasionally sluggish, and some show evidence of pituitary hibernation. The males are very effeminate and gentle in disposition. The females exhibit the same type of adiposity as the male, and the breasts are large and pendulous. Menstruation is generally delayed, and when present the flow is diminished and irregular. The basal metabolism is generally normal, the carbohydrate tolerance increased, and the appetite is usually voracious.

*Neurath Cushing Syndrome.*—Cushing

has described a type of dyspituitarism presenting the signs and symptoms of both increased and decreased pituitarism occurring in the same individual. These individuals suggest a primary hyperpituitarism, or acromegaly, upon which later is ingrafted a hypopituitarism characterized by a rapidly increasing girdle type of obesity, physical and mental sluggishness, loss of libido, and various types of neuroses.

*Laurence-Biedl Syndrome.*—This syndrome was first presented by Laurence and Moon in 1866. It is characterized by a dystrophia adiposogenitalis of the Frohlich's type<sup>1</sup>, polydactylism, syndactylism, and retinitis pigmentosa, associated with mental retardation and deformity of the skull.

1. A case reported by me in this Journal, May, 1931, presented obesity more of the abdominal type rather than that which is usually associated with Frohlich's syndrome.

The etiology of this peculiar syndrome is still in doubt, but the majority of those who have studied it believe it to be of pituitary origin.

*The Adult Type of Hypopituitarism.*—This type occurs usually near the senescence. Obesity develops rapidly, the skin becomes waxy, the hair becomes sparse, and, in the male, the pubic hair may assume the same distribution as that of the female, and the female develops a hypertrichosis of the face. The appetite is increased, the libido is lost, and the patient becomes somewhat lethargic.

*Dercum's Syndrome (Adiposadolorosa).*—Although Dercum in his original description of this condition attributed it to thyroid dysfunction, many of the later writers who have studied this syndrome believe it primarily of pituitary origin. Certainly the fat distribution is of the pituitary type and, whilst the pain and tenderness is present over the entire body, it is particularly severe over the cervical region. Painful cervical fat pads are rather constant findings in hypopituitarism.

The relationship of some of these clinical syndromes to pituitary pathology was first evidenced in the examination of acromegalias coming to autopsy. Hypophyseal tumors were found in these individuals, and further examination revealed that the tumors were found in these individuals, and further examination revealed that the tumor was composed only of anterior lobe tissue. Later it was found that removal

of the gland in immature animals resulted in their growth being stunted, the development of obesity, and the primary and secondary sex characters being retarded. It was logically assumed then that the tumor found in acromegaly produced an irritation or stimulation of the gland and that pathological gigantism was due to an increased function; whereas the Frohlich types were the result of hypofunction. Much confusion and doubt accompanied the presentation of many of these clinical syndromes, especially in the Brissaud type, in which there was supposed to be a diminution of the sex hormone and overproduction of the growth hormone.

The brilliant achievement of Evans and Long, who in 1921 first produced gigantism in rats by the injection of freshly prepared beef anterior lobe pituitaries, removed clinical pituitary syndromes from the sphere of doubt into the realm of reality. Their work was the stimulus for much intensive research, and as this continues, an ever increasing number of active hormones of the ductless glands are being presented.

#### ANTERIOR PITUITARY HORMONES

During the past decade animal experimentation has shown twelve, distinct, active principles of the anterior lobe of the hypophysis, the majority of which have been recently summarized by Bugbee, Simond, and Grimes. They are as follows:

1. *Growth Hormone.* The growth hormone was first demonstrated by Evans and Long. They prepared a saline suspension of freshly chopped bovine anterior lobe pituitaries and injected this intraperitoneally into rats. The rats grew rapidly to twice the size of the controls. In a series of dehypophysectomized rats the animals remained dwarfed and sexually immature, and developed obesity suggestive of Frohlich's syndrome. After a few weeks of intraperitoneal injections, the animals began to grow in length, matured sexually, and compared favorably with the normal controls. Difficulty was encountered in finding a method of sterilizing this substance and retaining its potency. This was later accomplished to a certain degree by Evans, Cornish, and Simpson by filtration. Further progress was made by Putnam, Teel, and Benedict in 1928. Recently, Bugbee, et al., have obtained a sterile product by filtration through asbestos and germ proof porcelain filters. This product retains its potency for

several months at a low temperature, and will soon be available for clinical research. Evan's and Long's experiments have been corroborated by numerous investigators. Teel and others have produced acromegaly in dogs by the repeated injection of this growth hormone. Engelbach has recently reported the first case of hypopituitarism in a human treated with Evan's growth hormone.

- 2-3. *Sex Hormone.* Smith and Engle in 1927, presented experimental evidence regarding the anterior pituitary sex hormone. This has been termed the "universal sex hormone," as it produces changes in the sex glands of both male and female simulating puberty. This hormone has two functions—a follicle-stimulating one, causing ripening and ovulation, and a luteinizing one, producing a luteinization of the follicle walls. Bugbee, Simond, and Grimes state, "at present we have no positive information as to whether there are really two sex hormones or whether only one sex hormone produces different effects under different conditions, particularly when supplemented by other hormones."

This universal sex hormone is also present in large quantities in the urine of pregnant women and has been found in amniotic fluid, placenta, and blood of pregnant animals. Its effect of producing corpora lutea and hemorrhagic follicles in the ovaries of immature animals is the basis for most of the present day pregnancy tests.

The interdependence of the gonads and anterior pituitary has been definitely established. Immature animals from which the gonads have been removed cannot be made sexually mature by anterior pituitary hormones, but may be matured without the power of reproduction by injections of hormones of the ovaries or testes.

In the absence of the anterior pituitary the gonads do not function and this is evidenced clinically in delayed maturity due to hypofunction of the anterior pituitary.

4. *Sex or Maturity Hormone (oral).* In 1929, Zondek reported an anterior pituitary sex hormone which he called Prolan. This hormone was capable of producing precocious sexual maturity in rats when fed orally and was more or less effective when given to women. A few months later Collip (who isolated the active hormone of the parathyroids) reported Emmenin, a



sex hormone prepared from the human placenta, which was effective by mouth. Prolonged administration produces continuous bleeding, whereas addition of the "second principle," results in the breaking of this continued oestrus reaction. His results have been very gratifying in the groups reported, which included forty cases of oligomenorrhea, forty cases of menorrhagia and metrorrhagia, and excellent results in over 90% of the cases of dysmenorrhea.

5. *Specific Dynamic Action.* Kestner and others claim to have demonstrated an anterior pituitary hormone which is responsible for the specific dynamic action of foods. These workers claim that in the absence of this hormone the obesity of Frohlich's syndrome develops.

6. *Thyroid Stimulation.* Crew and Wiesner and others found that removal of the anterior pituitary produced a decreased metabolism and atrophy of the thyroid. Transplants and injections of fresh pituitaries produced regeneration of the thyroid and return to normal of the metabolism. This is accepted as evidence of an anterior pituitary hormone which stimulates the thyroid.

7. *Lowering of Metabolism.* Lee and Gagnon report that injections of anterior pituitary growth hormone also decreased the metabolic rate. It is now thought that the growth hormone itself may stimulate anabolism and inhibit catabolism, resulting in the organism's lessened oxygen requirement and lowered gaseous metabolism.

8. *Water Intake and Output.* Teel and Bugbee, Simond, and Grimes observed that animals given daily injections of anterior pituitary showed a greatly increased water intake and output.

9. *Stimulation and Lactation.* Corner, Evans and Simpson, Parkes, and others have observed hyperplasia of the mammary glands and abundant lactation following anterior pituitary injections in animals. The consensus of opinion is that the anterior pituitary hormone functions through its effect on the ovary, or that some ovarian hormone must act upon the mammary glands previously to enable the anterior pituitary hormone to produce lactation. This conclusion is based on the fact that controls on males and ovariectomized females gave no results whatever.

10. *Non-Protein Nitrogen Reduction.* Teel and Watkins have repeatedly demon-

strated a marked reduction of 20 to 30% of the non-protein nitrogen in the blood following injections of active anterior pituitary extracts in dogs. Extracts containing the growth hormone in abundance produced a greater fall than control extracts.

11. *Initiation of Menstrual Bleeding.* Hartman, Firor, and Geiling have in the past year demonstrated that menstrual bleeding in monkeys can be initiated by injection of anterior pituitaries. Removal of the animal's hypophysis prevented this bleeding except when replacement therapy was given. These experiments supply positive evidence that menstrual bleeding is due to the presence of an anterior pituitary hormone rather than to the absence of a corpus luteum hormone.

12. *Crop Gland Stimulator.* A twelfth activity of the anterior pituitary has been brilliantly demonstrated by Oscar Riddle. The crop glands of pigeons develop periodically and begin the production of the so-called crop milk precisely at the time their young are hatched. By injections of anterior pituitary extracts rich in the maturity hormone, Riddle was able to cause the development of the crop gland and production of crop milk at pleasure in both male and female adult and immature birds.

Since the pioneer work of Evans and Long, much intensive research has been done and an unusually extensive literature has been created upon the subject of pituitary hormones. Although many conflicting reports are to be found, indisputable evidence of the existence and function of certain of these hormones has been definitely established.

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#### EPHEDRINE IN ADAMS-STOKES' SYNDROME

J. Edwin Wood, Jr., University, Va. (Journal A. M. A., April 16, 1932), calls attention to the fact that epinephrine has been used with success to abolish the temporary ventricular standstill of Adams-Stokes' syndrome. The transient nature of its action and the necessity for subcutaneous administration represent two palpable objections to this drug. Ephedrine largely overcomes both of these difficulties, as it exhibits an epinephrine-like action over a more prolonged period and may be administered orally. These considerations and three favorable case reports in the literature led the author to the use of ephedrine in an instance of severe Adams-Stokes' disease. After barium chloride had failed, ephedrine by mouth stopped the seizures. Continued oral administration of ephedrine has prevented further attacks over a period of eighteen months.



## POST GRADUATE MEDICAL COURSE IN OTOTOLOGY

L. W. KIBLER

Director Post-Graduate Medical Study University  
Extension Division

NORMAN

Dr. Erick Ruttin of Vienna, Austria, closed his course in Otology for Oklahoma Eye, Ear, Nose and Throat specialists in Oklahoma City Saturday afternoon, April 30th. Dr. Ruttin was brought to Oklahoma by the University Extension Division for a one week's course at the Medical School. For many years, Dr. Ruttin has been a noted research worker in Otology in Vienna as well as an able teacher. Many American specialists going to Vienna annually have taken his courses. Several Oklahoma specialists had previously had his courses in Vienna.

Dr. Ruttin spoke excellent English and all the specialists agreed that his course was one of the most useful they had ever experienced. His text book upon the ear has been translated into several languages. While at the University Hospital giving his courses, several operations were performed in which he demonstrated his method, particularly in mastoid operations. Dr. H. Coulter Todd was chairman of the clinical arrangements. Dr. Todd is

head of the Oklahoma Department of Otology.

This is the fourth course for four consecutive years offered by a Vienna specialist and brought to the University of Oklahoma by the Extension Division. All these courses have been for the benefit of Oklahoma specialists in eye, ear, nose and throat. The group this year expressed a desire for further instruction to be brought from Vienna, advising that they were the most able teachers and possessed teaching ability found no where else in the world. It was necessary for the President of the University to write a special letter of request for the services of Dr. Ruttin, in order to secure for him a leave of absence from the University of Vienna. We found it necessary also to secure a special permit from the Austrian government, allowing him to leave the country. Recent regulations have made this necessary in their country.

This course closed the year's program of medical post-graduate teaching by the University Extension Division. Many courses have been held in county seat towns and cities distributed over the state. The State Medical Association has cooperated and assisted in financing two of the courses with the largest attendance. A total of 952 have come into the courses given by the Extension Division this year. Twenty-one specialists took the course offered by



Dr. Ruttin. The names of those who took the course are as follows:

1. Dr. C. A. Hicks, Wetumka.
2. Dr. C. E. Williams, Woodward.
3. Mr. L. W. Kibler, Oklahoma City.
4. Dr. H. Coulter Todd, Colcord Bldg., Oklahoma City.
5. Prof. Erick Ruttin, Vienna, Austria.
6. Dr. H. C. Childs, Medical Arts Bldg., Tulsa.
7. Dr. C. B. Barker, Guthrie.
8. Dr. G. C. Webb, Russellville, Arkansas.
9. Dr. L. C. Kuyrkendall, McAlester.
10. Dr. T. G. Wails, Medical Arts Bldg., Oklahoma City.
11. Dr. W. C. Miller, Guthrie.
12. Dr. L. C. McHenry, Medical Arts Bldg., Oklahoma City.
13. Dr. E. C. Mead, Gainesville, Texas.
14. Dr. W. O. Quiring, Hutchinson, Kansas.
15. Dr. H. S. Browne, Ponca City.
16. Dr. D. W. Miller, Blackwell.
17. Dr. W. A. Kriesel, Little Rock, Arkansas.
18. Dr. P. F. Herod, El Reno.
19. Dr. L. F. Cailey, Medical Arts Bldg., Oklahoma City.
20. Dr. T. R. Lutner, Lawton.
21. Dr. M. K. Thompson, Muskogee.
22. Dr. J. C. Janney, Dodge City, Kansas.
23. Dr. A. C. McFarling, Shawnee.
24. Dr. F. B. Hicks, Medical Arts Bldg, Oklahoma City (was absent).

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#### PERIPHERAL NERVE PARALYSES FOLLOWING USE OF VARIOUS SERUMS: REPORT OF CASE AND REVIEW OF LITERATURE

Forest Young, Rochester, N. Y. (Journal A. M. A., April 2, 1932), reports the case of a man, aged 40, who was given tetanus antitoxin following a small injury. Severe serum disease ensued three days later. Three days after the onset of serum disease he began to have severe pain in both upper extremities and, to a lesser extent, in the back and legs. Seven days after the beginning of serum disease he noted weakness of the right arm with diminished sensibility. Six weeks after the serum disease he had an evident paralysis of the axillary nerve, with muscular atrophy and complete reaction of degeneration. After some three months of daily massage and abduction in a splint feeble motions of the mid-section of the deltoid muscle could be made out and the muscles appeared less atrophic. The author calls attention to the fact that there seem to be two clinical pictures which may follow serum injection. The first, and probably the more common, is that of injury to the peripheral nerves. In this group the patient receives an injection of serum often for the first time. In from four to eight days, he usually, but not invariably, has a serum reaction of an intense degree. In from two to three days more, severe pain is experienced in one or both of the upper extremities with pain of a lesser degree in other parts of the body. In another two or three days, weakness of one of the upper extremities is then noted. Either this is followed by gradual com-

plete recovery extending over a period of a month, or in about six weeks muscular atrophy and reaction of degeneration to electrical stimuli are noted. The prognosis in the latter group is only fair, incomplete recovery being the rule. The cases in the group showing signs of involvement of the central nervous system are on the whole more serious as regards life. The usual clinical course seems to be as follows: The patient receives serum, generally intraspinally, in repeated doses. After a time, varying from three days to a month, and without warning, another injection is followed by a severe reaction. This is manifested usually by a generalized urticarial eruption, which is followed in a few hours by convulsions, opisthotonos, coma, high irregular pulse, irregularity in respirations, and possibly death. The patient, however, may recover and, if so, recovery is usually complete. If the cord is involved there may be, of course, residual paralysis and atrophies as in poliomyelitis. The paralyzes following vaccines are too few to afford much in the way of conclusions. In general, they seem to be distinguished by the fact that they are not accompanied by serum disease, are much slower and more gradual in onset and do not necessarily show a predilection for the upper extremities. The etiologic theories considered are those of constriction of the nerves by perineural edema and direct toxicity of the serum for ganglion cells or their processes. Prognosis is determined by the occurrence of atrophy. In those cases in which atrophy is not noted in from six weeks to two months, the prognosis is good. In cases in which atrophy occurs, the prognosis is poor. Peripheral nerve paralysis following the use of serum is, however, so rare that it should in no way influence the use of prophylactic serums but should be regarded as one of the hazards of so doing, and the patient should possibly be warned of rare untoward results.

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#### SUBPHRENIC ABSCESS

D. C. Elkin, Atlanta, Ga. (Journal A. M. A., Oct. 31, 1931), advocates the transpleural operation, done in two stages, as the safest and most direct approach for abscess above the liver. Under procaine or nitrous oxide and oxygen anesthesia about 2 inches (5 cm.) of the eighth and ninth ribs are excised in the posterior axillary line. The intercostal muscles with the nerves and vessels are removed so as to give a clear view of the underlying pleura. The costophrenic sinus may have already been obliterated by adhesions due to infection, but even then it is safer to sew the parietal pleura to the diaphragm by eight or ten interrupted sutures of catgut placed in a circle. The sutures are left long and are tied over the gauze packing in order to cause firmer adhesions and safer obliteration of the costophrenic angle. Forty-eight hours later the gauze is removed and the sutures, previously placed, are used for traction. An exploring needle can then be passed with safety through the diaphragm into the subphrenic space. If pus is encountered the needle is followed into the abscess and the cavity drained. If pus is not found with the needle there is no danger in opening the diaphragm and exploring the top and posterior surfaces of the liver with the fingers. When pus is encountered, it should be drained without further exploration or else the protective barrier of the abscessed wall may be ruptured and the infection spread.



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President

OKLAHOMA STATE MEDICAL ASSOCIATION

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### EDITORIAL

#### THE FORTIETH ANNUAL SESSION, TULSA

Contrary to expectations the attendance at the Tulsa meeting was much better than had been expected. Due to the depression it was not believed the attendance would be anything approaching normal; more than 470 physicians attended the meeting.

The commercial exhibit space was completely full; the scientific exhibit space fairly well filled. With few exceptions Sections and meetings started on time and most of the Sections completed their work within the allotted time. The

General Scientific Sections were well attended and gave general satisfaction. With few exceptions there were no complaints as to any phase of the meeting. The writer has been advised that our neighbor, Missouri, had an attendance of only 300; comparing the population of the two states, the medical profession of Oklahoma is certainly to be commended upon its splendid attendance upon this occasion.

The outstanding actions affecting members and their future procedure taken by the House of Delegates was as follows:

A change in the By-Laws, permitting any physician temporarily on service in the State, in any Federal Governmental position, and who practices ethical medicine to become a member of any Society where he may be located, and after due application. It was also provided that hereafter on the first day the chairmen of the Sections shall name nominating committees of three members who shall report their nominations at the next meeting of the Section, and in addition thereto nominations shall be permitted from the floor.

It was also provided that in addition to the present Sections on General Surgery, General Medicine, and Eye, Ear, Nose and Throat, there would be added two Sections—one on Urology, Syphilology and Dermatology and one on Obstetrics and Pediatrics.

#### GASTRIC AND DUODENAL ULCER

This is a subject of importance to practically every practitioner of medicine, for the patient calls upon nearly every branch of medical man for relief. The symptoms cover such a wide range, presenting so many variations from time to time that diagnosis is a matter of difficulty. Even those presenting clear cut, and what are thought to be positive symptoms, may upon abdominal incision and examination not disclose the presence of ulcer.

Richard H. Miller<sup>1</sup> states "the problem of the causation of peptic ulcer seems as far from solution as ever, though intriguing facts are constantly being brought to light. Let me recall to your attention that gastric ulcers occur on the lesser curvature, usually near the pylorus, benign ulcer never occurs on the greater curvature, and duodenal ulcer is usually within an inch of the pylorus, where the duodenal mucous membrane first comes into con-

<sup>1</sup> New England Journal of Medicine, Vol. 206, May 5, 1932.

tact with the acid chyme expelled from the stomach."

"Schultz, regarding the etiology, presents a study of 30 postmortem specimens, and he states that the lesion may be the direct result of infarction due to arterial disease, with embolism, or thrombosis; he states that the ulcer progresses because of secondary infarcts in its floor, and that similar lesions can be found elsewhere in the body. One of the most striking facts about peptic ulcer is its seasonal recurrence, and Einhorn, in an exhaustive study of 800 patients finds the greatest number of recurrences in September and May; diet, pressure, and psychic trauma bring on some recurrences, though in 25% of all the cases the cause of return of activity could not be determined." It is noted that Abyssinians, who eat huge amounts of cayenne pepper, afford occasion for speculation. These people have a high incidence of ulcer.

We are not concerned so much with the treatment of these conditions except to say that it is pretty generally accepted that at first, and probably for a long time medical treatment is indicated, but certain complications, such as hemorrhage and occlusion, due to scar formation as evidenced by symptoms plus thorough radiological study, are as a rule positive indication for operation. The role of focal infections is not to be overlooked, as such cases should have every discoverable focal infection attended to. In this connection you will recall that Stuart McGuire, with the abdomen open and in the presence of a moderate duodenal ulcer does not operate upon the ulcer but often removes a coincident diseased appendix and then refers the case to the internist for medical treatment of the ulcer. This speaks volumes as to McGuire's idea of focal infection bearing an important role as to causation and continuation.

It goes without saying that in some Sippy powders, diet and etc., may be carried to extremes; this especially applies to those cases that show evidence of rather constant or recurrent hemorrhage. If medical treatment cannot soon control this hemorrhage, though they are small in volume, sooner or later the patient may become practically exsanguinated, "bled-white" from the constant loss of blood, when the patient is then in a dangerous condition for he may die from a continuation of the hemorrhage or be a very poor surgical risk. Probably every one of these

cases should have the advantage of consultation between the internist and surgeon with both bearing in mind the limitations of medical treatment and the imperative demand for surgical intervention under certain conditions.

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### WHEN COSMETICS BECOME MEDICINE

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The Food and Drug Administration has noted a recent material increase in the number of manufacturers who are labeling cosmetics with claims for the prevention or cure of disease. The Administration has ruled that when such claims are made these cosmetics become at once subject to action under the Federal Food and Drugs Act.

Tooth pastes are sometimes labeled as antiseptics or as cures or preventives of diseases of the mouth. Some manufacturers represent face creams as having power to cure pimples and other skin diseases; others label hair dressings as hair restorers, and shaving soaps as antiseptics or destroyers of disease germs.

The Administration makes the following statement: "Reliable dental opinion holds that no tooth paste, regardless of its composition, can truthfully be represented as a cure or a preventive of pyorrhea and certain other oral diseases. Physicians regard only such preparations as are tonics for other parts of the body as tonics for the hair. Pimples may be a symptom or the result of a variety of diseases, many of them serious, for which face creams do not constitute adequate treatment."

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### TRANSACTIONS OF THE FORTIETH ANNUAL SESSION OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, MAY 24, 25, 26, 1932

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#### THE COUNCIL MAY 24, 1932, 4:00 P. M.

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Called to order by the President, Dr. H. C. Weber, Bartlesville.

The President appointed an Auditing Committee, consisting of Drs. F. M. Adams, Vinita, and Frank H. McGregor, Mangum.

Prior to this meeting a Credentials Committee, composed of Drs. McLain Rogers, Clinton; W. A. Howard, Chelsea; and Charles J. Woods, Tulsa, had been appointed.

Present—Doctors: H. C. Weber, President, Bartlesville; R. M. Anderson, President-Elect, Shawnee; C. A. Thompson, Secretary-Treasurer, Editor, Muskogee; Paul B. Champlin, Enid; J. C.



Ambrister, Chickasha; LeRoy Long, Oklahoma City; Frank H. McGregor, Mangum; F. M. Adams, Vinita; J. S. Fulton, Atoka; W. M. Gallaher, Shawnee; W. A. Howard, Chelsea; O. E. Templin, Alva, Councilors.

Minutes of the former meetings passed and approved without reading as they had been previously published.

Mr. F. F. Alexander, Dallas, Texas, representing the United Mutual Fire Insurance Company, of Boston, requested endorsement of his Company. Moved by Dr. Long, and seconded by Dr. Willour, and carried, "that it is not within the province of the Oklahoma State Medical Association to undertake such matters," therefore no action was taken.

The Auditing Committee reported as follows: "We have this day examined the books of the Oklahoma State Medical Association and the certified audit attached, and to our best belief and knowledge find them correct." Signed, Dr. F. M. Adams, Chairman, and Dr. Frank H. McGregor. The report was accepted and approved.

No action was taken with reference to the suggestion that the body go on record as to dissemination of contraceptive advice.

Dr. L. S. Willour, presented charts and entered into detailed explanation of the Post-Graduate services being rendered by the State Medical Association, in connection with the State University. It was reported that 749 physicians attended the various meetings. It was the consensus of opinion that the work was highly beneficial to the profession at large and should be continued. It was moved, seconded and carried, that \$700.00 be appropriated to cover the share of the Oklahoma State Medical Association in this work for the coming year.

It was also moved and seconded that the Secretary be directed to contact the Committee on Medical Education and the Librarian of the American Medical Association with a view to the possibility of establishing an exchange of moving picture films as between States. The idea of the discussion was that this service should be best obtained through the offices of the A. M. A., rather than through direct exchange between this and other States.

Dr. R. M. Anderson discussed Sections and after a general discussion a Committee was directed to report to the Council the suggestion that there be added to the present Sections on General Surgery, General Medicine, Eye, Ear, Nose and Throat, two new Sections, one devoted to Urology, Syphilology and Dermatology, and one to Obstetrics and Pediatrics. This motion carried.

The motion was then made and adopted that the Council adjourn, to meet again upon the call of the President, if found necessary.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

## HOUSE OF DELEGATES

TULSA, MAY 24, 1932, 7:30 P. M.

Called to order by the President, Dr. H. C. Weber, Bartlesville.

Roll call of Delegates by counties, was ordered by the President, resulting as follows:

Alfalfa County—Dr. Z. J. Clark, Cherokee.

Carter County—Drs. F. W. Boadway, Walter Hardy, Ardmore.

Creek County—Dr. W. P. Longmire, Sapulpa.

Haskell County—Dr. R. F. Terrell, Stigler.

Kiowa County—Dr. H. C. Lloyd, Hobart.

Harmon County—Dr. W. G. Husband, Hollis.

Lincoln County—Dr. W. D. Baird, Sr., Stroud.

Logan County—Dr. C. S. Branson, Coyle.

Marshall County—Dr. J. L. Holland, Madill.

Mayes County—Dr. Carl Puckett, Oklahoma City.

McIntosh County—Dr. W. A. Tolleson, Eufaula.

Muskogee County—Drs. S. D. Neely, Ed White, E. H. Coachman, Muskogee.

Noble County—Dr. B. A. Owens, Perry.

Oklahoma County—Drs. A. L. Blesh, A. B. Chase, J. T. Martin, L. J. Moorman, P. M. McNeill, C. M. Pounders, Horace Reed, W. J. Wallace, W. K. West, Oklahoma City.

Osage County—Drs. C. K. Logan, Hominy, Divonis Worten, Pawhuska.

Ottawa County—Dr. F. W. Meriwether, Miami.

Pawnee County—Dr. C. H. Haddock, Pawnee.

Pittsburg County—Dr. B. B. Kies, North McAlester.

Pottawatomie County—Drs. T. C. Sanders, John A. Walker, Shawnee.

Pushmataha County—Dr. D. W. Connally, Clayton.

Rogers County—Dr. W. S. Mason, Claremore.

Seminole County—Dr. T. H. Ware, Seminole.

Stephens County—Dr. D. Long, Duncan.

Tillman County—Roy Fisher, Frederick.

Tulsa County—Drs. A. Ray Wiley, Calvin Johnson, Henry Browne, C. H. Haralson, Fred Bolton, Tulsa.

Washington County—Drs. J. V. Athey, H. G. Crawford, Bartlesville.

Officers: Drs. H. C. Weber, Bartlesville, president; R. M. Anderson, Shawnee, president-elect; C. A. Thompson, Muskogee, secretary-treasurer-editor.

Councilors: Drs. F. H. McGregor, Mangum; Paul B. Champlin, Enid; LeRoy Long, Sr., Oklahoma City; J. C. Ambrister, Chickasha; W. A. Howard, Chelsea; F. M. Adams, Vinita; L. S. Willour, McAlester; J. S. Fulton, Atoka.

Reading of the minutes for 1931, passed and approved as printed in the June Journal, 1931.

Dr. W. A. Tolleson, Eufaula, and Dr. L. S. Willour, McAlester, called attention to the necessity of a Resolutions Committee. Dr. Willour moved that the President name such Committee; the motion carried. The Committee consisted of Drs. L. S. Willour, Chairman, S. D. Neely, Muskogee, A. B. Chase, Oklahoma City.

Motion made and carried that the report of the Delegates of the A. M. A., be forwarded to the Journal for publication. Upon the motion of Dr. J. S. Fulton, Atoka, it was moved that the report be read and later published in the Journal. This motion carried. Dr. W. Albert Cook, Tulsa, read

the report and it will be published in the Journal at a later date.

The Resolutions Committee passed the following:

"That the President appoint a Committee to report to the 1933 House of Delegates their investigation of the laws of Oklahoma regulating the practice of medicine, and the feasibility of presenting before them a bill regulating the practice of medicine in Oklahoma somewhat similar to the Oklahoma State Bar Act regulating the practice of Law."

The motion was adopted.

The following proposed change to the By-Laws was presented:

"After Section III, Chapter 1, Membership, add Section IV; Any County Society may admit to membership any Medical Officer detailed to duty in the State of Oklahoma from any branch of the Medical Service of the United States Government."

(While this motion was voted upon, and then carried, it was then decided the matter would have to come up before the House of Delegates at the next meeting, May 25th, 8:00 A. M.).

A Resolution was proposed as follows:

"Whereas it is evident that any reduction in the personnel of the Medical Corps of the United States Army would make it impossible to render efficient medical service to the Army of the United States,

And Whereas, with any reduction of the Medical Corps of the Army it would become necessary to discontinue training and instruction of the Organized Medical Reserve, and the Medical Corps of the National Guard,

And Whereas, we are cognizant of the deplorable unpreparedness to meet the medical situation at the outbreak of the World war,

And Whereas, there is in Oklahoma at present a component of active and energetic Medical Reserve Officers,

Therefore be it resolved that we, the House of Delegates of the Oklahoma State Medical Association in regular session assembled, do petition our delegation in Congress to oppose any action which would in any way decrease the personnel of the Medical Corps of the Army."

Discussion of above resolution as follows:

Dr. A. L. Blesh, Oklahoma City: "In these times the Army must cut as well as everybody else. Everyone else is cutting, and I don't see why the Medical Corps of the Army should be placed before the citizenship. I served in the World war and I would be willing to go again. I have not asked one cent from the Government since. I do not believe that Resolution is kind. I do not believe it is good. I do not believe it will set right, and therefore I ask that the resolution be not accepted."

Dr. L. S. Willour, McAlester: "If I may discuss

this Resolution I would say this: The Bill which was passed making appropriation for the Navy makes an allowance of nine hundred Medical Officers of the Navy, which is almost as many as there are Medical Officers in the Army at this time, with half the personnel to serve. It is necessary to have in the neighborhood of one thousand Officers in the Navy to serve one-half the personnel, it appears that it would be necessary to keep enough Medical Officers in the Army to serve the Army personnel. Not only that, but Medical Officers of the Army do a great deal of civilian work as well—in the Philippines and Panama a great deal of that is being done. The situation of the Medical Officers of the Army is a little different than that of Medical officers of the Navy at this time because of the professional service that is being rendered to the citizenship outside of just the United States Army. A cut in the personnel would mightily handicap the work."

Dr. Thompson: "How many would the reduction in personnel cut out?"

Dr. Willour: "Major French, will you answer that question?"

Major Sanford W. French, U. S. A. Ft. Sam Houston, Texas: "282 Medical Officers out of the number at the present time."

Dr. Thompson: "All it would amount to then is a saving of one-fourth of the salaries now being paid."

Dr. Willour: "I happen to be one of the Officers, and I had the same spiel handed to me that the rest of them got. 'Why don't you come in the regular army? It will assure you a living and assure you retirement with pay, and it is just about the best insurance you can get.' These men are the very ones who had that talk given them and went into the Army expecting that would be the situation, and now after these fifteen years they are having to get into competitive work in the medical profession. The average age of these men is from forty-five to fifty. It is a horrible handicap for a man of that age to enter regular practice of medicine after putting in probably three-fourths of his time in the Army in administrative work."

Dr. Thompson: "What would the saving be to taxpayers if this is put into effect?"

Major French: "It would save perhaps \$280,000.00."

Dr. Blesh: "Nobody wants to cut. Everybody in private life is getting it, and I don't see why it shouldn't be the same in the Army?"

Major French: "I might state that the Air Corps and the legal profession have been excluded from the proposed cut."

Dr. A. Ray Wiley, Tulsa: "What will the status of those officers be if they are let out?"

Dr. Thompson: "They will still draw three-fourths pay and can be called back if needed."

A standing vote was taken, resulting in 20 in favor of and 23 against the Resolution.

#### RESOLUTION

"The Council recommends that the Chairman of each Section shall appoint a nominating Committee of three members of the Section at the termination of the



last meeting of the Section on the first day of the Scientific Work. This Committee shall present the names of two members for the positions of Chairman, Vice-Chairman and Secretary respectively, as the first order of business at the first session of the second day, at which time the election of these officers shall take place, it being understood that in addition to the nominees of the Committee nominations may be made from the floor."

Dr. Horace Reed, Oklahoma City: "This matter was brought up in the House of Delegates a year ago. You remember that there was considerable complaint made because of the lack of balance in the programs. In each section there was considerable disagreement. Now we have a committee that was supposed to do the balancing act and was supposed to be responsible for the Section program. In order to put the responsibility where the by-laws or constitution, or whatever it is provides for, we passed a resolution at that time empowering this Committee to appoint section officers, thinking that would give them authority to put on a balanced program. There has been considerable dissatisfaction about that. I believe this will help. I am in favor of that resolution".

Dr. W. S. Mason, Claremore: "It seems to me that every bit of power that members of the Association have is being taken away from them. They have no right whatever to select anything in their own section. I am against the motion."

Dr. Thompson: "I believe the gentleman from Rogers County misunderstands the motion. The Chairman of each Section appoints a nominating committee, who in turn select the nominees for vote by the Section."

Dr. Mason: "It still doesn't decentralize the thing."

Dr. LeRoy Long, Oklahoma City: "This resolution would make it possible for each Section to select its own officers. I believe the doctor doesn't quite understand its intent. The purpose is to have the Committee think carefully over the members of the Section on the first day and then report the next day, and any nomination may be made from the floor. The Section will vote on these two men or three men or whatever number may be nominated from the floor. I am perfectly willing to change it in any possible way that would satisfy the democratic requirements of the Society."

Dr. Mason: "Did the Resolution there as read say anything about being able to nominate from the floor?"

Dr. Willour: "It being understood that in addition to the nominees of the Committee nominations may be made from the floor."

Dr. Mason: "I withdraw my objection."

Motion carried.

Dr. Weber: "Dr. Willour, have you something else to report to the House?"

Dr. Willour: "I have been asked to report on the work that has been done in the Medical Extension Post-Graduate Course and the motion picture films. The University Extension Department very kindly prepared a map to show this, (demonstrating map). This will show the work

that was done. You have probably noticed the report of the Secretary relative to finances that \$700.00 was spent this year for post-graduate work and \$350.00 that was contracted for last year. The courses in gynecology and obstetrics are marked on this map by green dots. These were held at five centers with a total attendance of 331. The course in surgical diagnosis was also held in five centers with an attendance of 418. The cost to the State Medical Society was \$350.00 for each of the two courses, the County Medical Societies where the courses were held meeting any other expense. A total of 749 attended, making the cost to the State Medical Society less than a dollar a head. Another course was put on by the Extension Department, the State contributing nothing to the expense, the members of the County Societies contributing \$10.00 apiece—that was put on in the northeastern part of the State. Ninety-one took another course at Oklahoma City and forty-one attended a course in Ear, Nose and Throat. As Chairman of the Committee that has been interested in this post-graduate work I feel that our money has been well spent in reaching 749 at a cost to the Society of \$700.00. \$700.00 has been put in the budget of the State Society to carry on this work for another year.

And now just a word relative to the motion picture films. This map will show the centers in which these motion pictures have been shown. I can see no reason why they have not been more widely circulated. We have now fifteen films. There are four reels on forceps delivery, three on eclampsia, two on acute appendicitis, one on benign prostate hypertrophy and three on infections of the hand. These have been seen by 850 physicians throughout the State as near as we can figure, giving each County Society its membership. Probably more doctors than that have been present—many times there is someone from the outside. More publicity should be given to the films. Probably more County Medical Societies would use them if they knew just how to get them. The only cost is the expense to and from Norman, and the only requirement that they be shown by a licensed operator. If the County seat does not have a picture show with a licensed operator, one can be sent out from Norman, the cost simply being his expense on the road. That is all it will cost. Or for \$15.00 or \$20.00 they will exhibit these films, bringing their own machine and putting them on. I am going to suggest that more publicity be given them in the Journal and see if more of the County Societies will not become interested in this method of instruction."

The question was asked if one or two films on medical diagnostic methods could not be obtained.

Dr. Willour: "I recommend that no more films be purchased until these have been more widely circulated."

Dr. Weber: "Will you tell the House the proposition about exchanging films?"

Dr. Willour: "In regard to the exchange of films and what we ought to do in post-graduate work and the use of films, while at the meeting of the American Medical Association in New Orleans I discussed with the librarian the matter of film exchange incorporated in the library of the American Medical Association. There are some other States that own motion picture films, and the purpose is to arrange for a film exchange with

the American Medical Association so that we may circulate them for a year or two and then exchange with one of the other States to save purchasing new films."

Dr. H. G. Crawford, Bartlesville: "It was suggested that the films have not been well enough used. The ones that came to Bartlesville seemed to have been too well used."

Dr. Thompson: "How was that?"

Dr. Crawford: "They were not good films."

Dr. Thompson: "All those I have seen were good films. Those in Muskogee were satisfactory."

Mr. Kibler, Oklahoma University Extension Department: "You were probably having trouble with your machine."

Dr. Weber: "Is there any further business?"

Dr. White, Oklahoma City: "I move in behalf of the Urologists that they be allowed a separate section, taking in other specialties with them, to be selected by the Council, such as Dermatology or Syphilology. I think the Urologists should be allowed a separate section."

Dr. Wallace, Oklahoma City: "In behalf of that motion, I wish to say this, the Urologists of the State, and especially those in Oklahoma City and vicinity, feel that it would be a step towards general improvement, not only to the Urologists but medicine involving the State in general. We have a plan, we think, worked out to this extent that we feel that we can put on a better section than has ever been put on before. We want to have one that is far-reaching, one that can be discussed from the standpoint of medicine and from the standpoint of pediatrics, one that can bring something that is good before the Association. At the present time there is very little interesting to them. Occasionally a few of our Urologists visit a little bit. We want some time devoted to that particular section. We think we can have a good and interesting section and one that will be instructive. If you will give us this section on Urology we will be glad to combine Syphilology or Dermatology or Radiology or whatever you want."

Dr. Thompson: "Will you submit that to the Resolutions Committee, putting it in form to cover the whole field? I am in favor of anything that will improve the Society."

Dr. White: "We will submit it to the Resolutions Committee."

Dr. Weber: "Then the motion is withdrawn."

Dr. Moorman, Oklahoma City: "I am interested in this discussion. At the present time we have some independent organizations. They come presumably to the State meeting but get through the first day or the day before the meeting and some of them leave. Wouldn't it be better to have four or six or eight sections and have these men here than to have them organize separate sections independent of the State Association and identified indefinitely so far as the State Organization is concerned? That gives us something to think about."

Dr. Thompson: "If you could get them to stay three days that would be fine."

Dr. J. A. Walker, Shawnee: If a group gets together by themselves they are instructing only

themselves. I think the general bunch ought to be given a little of all the material. One bunch has been here and had their meeting and gone home. They didn't get as much as if it had been prolonged through the whole meeting. All of these fellows don't have the same ideas. If we don't unload on them and they don't unload on us we won't know anything about it. We ought to get everything we can. I am a specialist on the skin and underlying structures, but I want to learn something about all of it."

Dr. Weber: "The danger in this Society as far as specialists are concerned is this—if the Organization separates it won't be long before you will have no State Society. I believe these sections should be divided up so that they will be interesting and instructive, and it is entirely up to this body here to regulate that part. That is your duty and the rest of the organization will have to abide by what you say."

Dr. Moorman, Oklahoma City: "This is a difficult problem to solve. It has been up before. I wonder if we can't compromise. Have short section meetings. Let these men interested in a special work have their separate section and then have general session with the balance of the Organization, bring something from each separate section into the general section. We have no one separate section which is not affiliated with this Association. Why not consider this?"

Dr. Thompson: "I would like to speak from a good many years of experience as to the sections. It is my memory that when we first started we hardly had any sections. We just had meetings. Papers of all sorts were mixed up indiscriminately. I do not recall how we got sections. The House of Delegates made them and provided for their functions. I can see how urologists are as intensely interested in their work as the eye, ear, nose and throat men, or the surgeons or anyone else, but I want to remind you that most of the doctors in the State are not doing any one thing, they are general practitioners, and they are the men we ought to reach and up-build. There is no use telling each other what we already know. The surgeons know how to do gall bladder or appendix or bone operations. You would laugh at me, Dr. Blesh, if I would tell you some of the things I think are particularly fine. We formerly had five sections. Once I found as low as twelve people in one of these sections, each one telling the other ones exactly what they all already knew. The object of the meeting is dissemination of instruction. The man behind the plow of the whole is the general practitioner. He is the one people see when they are sick. He is the man to find out whether this is diphtheria, scarlet fever, pneumonia, or appendicitis. They don't go to specialists. They see their family doctor. We can add another section. It won't hurt. We might have one day or part of two days for general scientific sections in which we could try to spread over all subjects or many subjects. The scientific work committee has hardly had a year to work out its problems. It was left to us last year to select the Section chairman. We might have made mistakes. In some cases we didn't and in some we possibly did. I don't see how in two days they are going to get all the territory covered. You have got to stay longer or change the system."

Dr. Weber: "There has been some talk about trying to run this the same as the big meetings



in Kansas City, have it all just in one session. You could do that if you didn't have any discussion, but if we had discussion that would not be possible. That would be the ideal way to get all the papers before all the members, but we figure in a place of this kind that wouldn't be practical at all. We will just have to have it in sections, I guess."

Dr. Moorman: "We have a general Scientific Committee now that tries to balance our program."

Dr. Thompson: "The attempt was made. We start at eleven o'clock in the morning on sections."

Dr. L. J. Moorman: "Would it not be possible to have general sessions on two mornings and have a balanced program touching all the specialties with selected papers and whoever the committee selects to give them, and in the afternoon have as many sections as you wish? Each afternoon each section must complete its work, and in that way you would have it complete in two days. I would like to make a motion to that effect if it is in order. The committee on scientific work could arrange the general sessions on both mornings. The afternoons would be devoted to the different sections, and each section must complete its work."

Dr. Horace Reed, Oklahoma City: "We have general scientific sessions each morning."

Dr. Thompson: "What he is trying to get at is to divide up in smaller sections."

Dr. W. J. Wallace, Oklahoma City: "It seems to me that we could have one day for the various sections and then the following day have a general session merging with the other sections. In order for these State Medical Societies to succeed they must adopt some technique such as succeeds in the clinical societies that are held in various places. These are held, as you all know, by general session. Scientific sections have as many different sections as needed. There are no discussions and in that way they can get through. Unless our Society adopts some of these methods we are going to have trouble. They are going to come here and get through and go home."

Dr. Thompson: "Please put this in writing and take it to the Resolutions Committee."

Dr. W. K. West, Oklahoma City: "I would like to suggest regarding the present program it has been rather disconcerting having the surgical section and the medical section running for two days. It is a question as to what paper will be on the second day."

Dr. Thompson: "That is impossible to say."

Dr. West: It is the first time I have ever seen this done. There are a great many men who can come only on one day. Perhaps they are interested in one or two papers. They do not have any idea what day they will be here. I will have to either go home and come back Thursday or stay tomorrow. That is one thing. Another thing is about the invitation to men who live in adjoining States. A long time ago we had a rule against that. I think that rule should be put in effect again. If we want men just out of the territory we can get them, or if we want men from out of town we can get them. The men from states not adjoining would be better drawing cards because they are better known."

Dr. Thompson: "You will have to make a resolution and give it to the Chairman of the resolutions committee that we do not extend invitations to doctors from the states adjoining the State of Oklahoma. We could try it several years and get along fine, in my opinion."

Dr. West: "I make a motion that the invitations to out-of-State doctors not include those States adjoining Oklahoma, providing that we do not exclude any man in Public Health or Government Service."

Motion seconded by Dr. Blesh.

Dr. Reed, Oklahoma City: "I can't make up my mind whether I approve of that motion or not. I think the Committee on Resolutions ought to think about that over night. It is a delicate situation."

Dr. Phil McNeill, Oklahoma City: "Does that resolution mean that if we have a good man in an adjoining State we cannot have him at our meeting?"

Dr. Fulton, Atoka: "That is what it means. It means we can't have Dr. Jackson of Kansas City, past president of the American Medical Association, or Dr. Cary of Dallas, President-Elect of the American Medical Association. These men cannot be invited because they live in states adjoining Oklahoma. I would be opposed to the motion."

Dr. Moorman, Oklahoma City: "I am opposed to it. I can't see any reason for such a discrimination."

Dr. A. Ray Wiley, Tulsa: "I think that is carrying it entirely too far."

Dr. E. H. Coachman, Muskogee: "I move that we table Dr. West's motion indefinitely."

Motion seconded, voted upon, and carried.

Dr. Wiley: "Do you want the reports of the committees tonight or in the morning? I am referring to the report of the committee on Medical Economics."

Dr. Thompson: "That has been circulated. Everybody has it, if there are some points that the committee would like to bring up, we will have it."

Dr. Weber: "There is just this about it. There is so much stuff to take care of that the more we get rid of the better. If the House of Delegates wants to hear this let's have it."

Dr. Fulton: "If we have to hear them, let's hear them."

Dr. A. Ray Wiley: "There is a portion of the report on the Committee of Economics that is going to take a little time. It is getting late now, so perhaps we had better not have it tonight, but there is some of it I do want the privilege of discussing at some time during this meeting."

Motion to adjourn made and seconded. Motion carried.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES  
TULSA, MAY 25, 1932, 8:00 A. M.

Meeting called to order by the President, Dr. Henry C. Weber of Bartlesville.

Roll call by Dr. C. A. Thompson of Muskogee, Secretary, and Dr. W. A. Howard, Chelsea.

Dr. Horace Reed, Oklahoma City: "Mr. Chair-

man and members of the House of Delegates; I should like to ask your unanimous consent to present a resolution, so that the members knowing about it may be thinking about it. I should like to ask your consent to do that."

Vote taken, and permission granted.

#### RESOLUTION

"Whereas, the State law which creates the "Soldiers' Relief Commission" provides or is interpreted as providing, that any honorably discharged veteran of the World war is entitled to hospitalization and medical service at the expense of the taxpayers of the State for the sickness or disability of non-service connection, and

Whereas, persons who are able to pay for hospital care and professional service are being cared for at the expense of the taxpayers of the State under this law, and

Whereas, this practice unjustly adds to the burden of the taxpayers of the State, is discriminatory in that all citizens are not accorded the same treatment, and takes from the members of the Medical profession a certain income which justly should go to them, therefore

Be it Resolved by the House of Delegates of the State Medical Association that the practice of the Soldier Relief Commission in giving hospitalization to those who are able to pay is unfair and unjust and is not a proper function of the State, and

Be it further Resolved that the Officers and Council of the State Association be urged to take such steps as is proper to inform the Medical profession and the people of the State of the situation as herein set forth to the end that the law may be repealed as soon as possible."

Dr. Weber: "You do not want to put that resolution now? The first order of business is the election of officers. Nominations for president are now in order."

Dr. W. A. Tolleson, Eufaula: "I want to nominate for President a man who is actively interested in organized medicine, a successful physician, a gentleman, trustworthy and worthwhile. It gives me great pleasure to recommend for your consideration Dr. T. H. McCarley of McAlester, Oklahoma."

Dr. G. L. Johnson, Paul's Valley: "I nominate for President Dr. D. Long of Duncan."

Dr. J. S. Fulton, Atoka: "I want to second the nomination of a man I think has had the proper training for President. When he came to Oklahoma he came to the proper part to get the ground floor in making a mighty good doctor. He came down there in that part of the country in which the influence and environment was mighty good for him. Dr. LeRoy Long came from there, and Dr. Willour, and some of these other fellows. They all got their start down there in Atoka County. That is where Dr. Willour and Dr. McCarley came from. When they get so big they are better doctors than the old man they get shoved out of Atoka County and have to go somewhere else. They go out and make good. I second the nomination of Dr. McCarley."

Dr. Walter Hardy, Ardmore: "I second the nomination of Dr. Long."

Dr. Ray Wiley, Tulsa: "I move that the nominations be closed."

Motion seconded, voted upon, and carried.

Dr. Tolleson: "May I ask that the names of the candidates be announced?"

Dr. Thompson: "Dr. T. H. McCarley and Dr. D. Long. Members of the House of Delegates are ineligible for election. Dr. Long is a member of the House of Delegates."

Dr. G. L. Johnson, Paul's Valley: "I had not thought of that. I withdraw my nomination, that being the case."

Dr. W. A. Howard: "I make a motion that Dr. McCarley be nominated by acclamation."

Dr. Tolleson: "I second that motion."

Dr. Weber: "Dr. Long has no vote. Are there any other nominations?"

It was moved and seconded that nominations be reopened. Motion carried.

Dr. J. S. Holland, Madill: "I move that nominations be closed and that we elect Dr. McCarley by acclamation."

Dr. Tolleson: "I second the motion."

Vote taken and motion carried.

Dr. Thompson: "It gives me great pleasure to cast the vote of this body for Dr. T. H. McCarley as President."

Dr. Weber: "Nominations for Secretary are now in order."

Dr. C. K. Logan, Hominy: "I nominate Dr. Claude Thompson of Muskogee."

Motion seconded.

Moved and seconded that nominations be closed. Motion carried.

Dr. Weber: "Dr. Claude Thompson of Muskogee is Secretary."

Dr. Thompson: "You all understand I can't make a speech and I just got up to tell you I can't make a speech. Thank you, though."

Councilors nominated by the Delegates from each District were as follows: District No. 2—Frank H. McGregor; District No. 3—Dr. Paul Champlin; District No. 4—Dr. A. B. Chase; District No. 5—Dr. D. Long, Duncan; District No. 6—Dr. W. A. Howard, Chelsea.

It was moved by Dr. Willour that the nominees for Councilors be elected by acclamation. Motion seconded, motion carried.

Dr. Thompson: "You have two Delegates to the American Medical Association whose terms expire, Dr. W. Albert Cook of Tulsa and Dr. Horace Reed of Oklahoma City."

Dr. Willour: "Mr. President, I would like to present for renomination as Delegate to the American Medical Association Dr. W. Albert Cook of Tulsa."

Dr. A. B. Chase, Oklahoma City: "I would like to present for renomination Dr. Horace Reed of Oklahoma City."

Dr. W. A. Howard: "I move that nominations be closed and that these gentlemen be elected by acclamation."

Motion seconded and carried.

Dr. Thompson: "Dr. W. Albert Cook of Tulsa and Dr. Horace Reed of Oklahoma City have been



elected as Delegates to the American Medical Association for the years 1933 and 1934."

Dr. Weber: "This completes the election. We will now have a report from the Resolutions Committee."

Resolution presented by Dr. S. D. Neeley of Muskogee as follows:

#### RESOLUTION

"To increase the interest and attendance at the Annual Meeting of the Oklahoma Medical Association, be it Resolved:

1. That the committee on Scientific Work arrange a program for General Scientific Session on each morning two days of the session.

2. That the afternoon sessions be devoted to the following sections (a) General Medicine (b) Surgery and Gynecology (c) Urology, Dermatology, Syphilology and Radiology (d) Pediatrics and Obstetrics (e) Eye, Ear, Nose and Throat.

3. That in the general session there be no discussions.

4. That each section must complete its program in the assigned time.

5. That each presentation in the section meetings be allotted fifteen minutes only and that no discussion be permitted to exceed five minutes.

Committee on Scientific Work to name Officers of new Sections.

Dr. Weber: "The first resolution to be placed is the one Dr. Reed spoke of regarding the Soldier Relief Commission."

It was moved and seconded that this resolution be adopted.

Dr. Reed, Oklahoma City: "Mr. Chairman and members of the House of Delegates, the thing which this resolution touches upon is this—any veteran who has a disability or sickness can upon presentation of evidence of an honorable discharge from the army to the Soldier Relief Commission get admission to the Sulphur Hospital for medical and surgical treatment without cost, irrespective of how much money he may have."

Dr. Thompson: "You would exclude men who are able to pay."

Dr. Reed: "That is it. Personally I would like to see this. The Soldier Relief Commission was established at a time when it was needed. The Federal Government had not yet taken hold of the situation and to take care of the soldiers who were disabled this Commission was established and a law passed whereby they could take care of emergencies and help the soldiers who had no connections, who were stranded, and who had not re-established themselves. This law covered that. It was not intended that it should continue to serve and care for soldiers indefinitely, but it is doing it. Many are being cared for who are able to pay. For example, last fall I operated a man from Tulsa, who had every appearance of living in opulence. He had a gall bladder operation. He wore the finest kind of clothing. He took a private room—I suppose he made up the difference in price. He had a private nurse. His family drove a car finer than I could afford. Yet he was treated without cost because he was admitted by the Soldier Relief Commission. That

man was able to pay the hospital and the doctor at Tulsa where he lives. That is only one example. I don't believe the taxpayers know about it. It is a question of whether we should continue their care and let the other citizens of the State carry the load. I believe fourteen years is a sufficient time for them to readjust themselves so that we can all be on an equal footing. I personally feel that the Soldier Relief Commission of Oklahoma has lived its day, and while I am not advocating that we refuse to admit the man who is not able to pay, I am opposed to caring for those who are able to pay for it. I am bitterly opposed to that and I think we should all be. Two years ago in America there passed a bill which was to give to old soldiers certain privileges at the expense of the Government, but President Hoover waited until the House of Delegates of the American Medical Association passed a resolution opposing such a measure. We are drifting into State medicine, and I am sorry to say that ex-soldiers are largely behind it and are working through the Veterans' Bureau to get State Medicine. These are things which affect us. There are some bitter fights going on in Congress. Special committees of the American Medical Association have been doing some very excellent work, but the fight is going on and on against this immense appropriation for building Veterans' hospitals all over the country for the care of veterans irrespective of service connections in most cases. There are millions of dollars invested in hospitals that are now being foreclosed all over the country. They could have been hospitalized as cheap if not cheaper in those than if these hospitals had not been built. One man at the head was asked this question, 'Now that the peak has been reached what will you do when these immense hospitals are no longer needed?' He replied. 'The times are changing. We are coming to State medicine.' And Oklahoma has lead the way. We are up against facts, and I think we ought to get busy and talk this thing up and decide what we ought to do. Men who are able to pay are being treated without cost for conditions that have no service connection.

Dr. Thompson: "Does the Federal Government pay for those hospitalized in Oklahoma City?"

Dr. Reed: "Only in emergencies."

Dr. Thompson: "That is the only kind they can take."

Dr. Mason, Claremore: "Dr. Reed, did you intend that to cover all hospitals or just the University Hospital?"

Dr. Reed: "All. If they are able pay their way, let them do it."

Dr. Mason: "Ex-soldiers who cannot pay have to be cared for. Would the resolution just exclude those who could pay or do away with it completely?"

Dr. Reed: "The resolution is intended to exclude those who can pay their way. I am not asking that it be done away with completely."

Dr. Mason: "The original intention of the Soldier Relief Commission was to take care of indigent ex-service men. I just wanted to be clear as to what Dr. Reed wanted in his resolution."

Dr. LeRoy Long: "Let us have the resolution read again."

The resolution was again read before the House by Dr. Reed.

Dr. Reed: "Personally I feel the time has come,

fourteen years after the war, when we all ought to be on an equal basis."

Dr. McLain Rogers: "That Relief Commission has served a good purpose in its day. It has met a lot of emergencies in the past year. I have checked these cases in our own hospital, which is allowed \$15.00 per week with all other expenses thrown in. It has served a good purpose in some of these cases which were truly emergencies. It is only the abuse and not the use which makes it a bad thing. If only applied to those who are absolutely pauperized it would be a good thing. There is also the question of what you are going to do with the new hospitals which were built after the war. It is going to be a bad situation. We have a Committee from the American Medical Association in rather close touch with the American Legion working this thing out. This resolution is very well put. It is a question of whether the abuse can be stopped. If an ex-service man absolutely pauperized is sent in we ought to care for him."

Dr. Thompson: "Dr. S. D. Neeley was connected with the Veteran's Bureau, and I should like to ask him whether he has any idea of what per cent come in at Muskogee who could pay a doctor or a nurse anything. Once in a while there were some who could, but not often. It is true that once in a while there was a case that stood out like a sore thumb. Men in banks—County and State officials. I would say ninety-eight per cent were unable to pay the hospital expenses for a month."

Dr. Neeley: "They are just as much able to pay as I am."

Dr. Thompson: "That is not the point. The moment you close Sulphur, Okmulgee county and others are going to have to take care of them. It falls back on the local county. Personally, I think we should stop all waste. Sometimes a man is sent from the Rio Grande region for a tonsillectomy or some other minor operation and it costs around a hundred dollars for his transportation to Muskogee and back. I don't think that should be done but I don't know of any practical way to reach it. The question has been raised several times as to whether you ought to make a man commit himself by saying, 'I am a pauper and I want help.' They won't do it. Some will suffer and some will die. There ought to be some way to work this out."

Dr. Neeley: "Personally, I don't think Dr. Reed is more than half right. In the last three to five years there seems to have been a great reaction. There is the hospital in Muskogee, thrown together, built in politics, and the contractors got the money. The hospital building has never been satisfactory to this day. The State of Oklahoma has no more right to treat these men than Muskogee County. Dr. Thompson says they won't sign a statement saying they are paupers—they will sign anything, don't you kid yourself."

I am an ex-service man and American Legion man, but I am not going to belong to the American Legion as long as they are as red as they are. They want everything they can get out of the Government and are just as cold-blooded as can be. I don't think Dr. Reed's resolution goes half far enough. The State has no more right to treat them than the County. We don't need more hospitals—the Veterans' Bureau can handle them. If they haven't got vacancies put them out in the hall. Create vacancies. Let the men

get in there. They have a staff of fifteen and can handle a lot of men. Put pressure on the Congressmen. Let the State legislature help out."

Dr. Moorman, Oklahoma City: "I think it is unnecessary to speak with the purpose of creating additional sentiment in favor of Dr. Reed's resolution, but I would like to say just a few words in explanation of the University Hospital's present condition and in connection with the general theme, because I feel it is something which the House of Delegates of the State Medical Association should think about. Dr. Reed did not in his discussion make clear that at the University Hospital we have what is called a clinical rate or basis upon which patients are admitted after a financial investigation, and under which they are supposed to pay fifteen dollars per week and receive medical and surgical care. If it is found that patients can pay or are able to pay, they are not admitted on this basis unless they are already committed by the County Commissioners, having supposedly already had a financial investigation. Now then, we have contracts with the State Organizations which Dr. Reed has mentioned and with the Veteran's Bureau that patients coming under the Veterans' Bureau are fully entitled to the care they receive, although they are paying about half of the cost to take care of them. We as taxpayers make up the deficit. Men coming from the Soldiers' Relief Commission do not have this financial investigation, in other words, we are not free to apply the same method. They are admitted regardless of their financial status on the \$15.00 rate. We not only give this free medical and surgical service, but pay taxes to give them hospital care and to take care of the great amount of clerical work that is necessary to take care of these cases. We anticipate the necessity of putting on an extra clerk at the taxpayers' expense to take care of the work connected with it. I personally am not very much afraid of State medicine, but I am very much opposed to extending free services to people who are able to pay for their care, and pay taxes to help support the State institutions. At New Orleans General Jackson whipped the British soldiers, three times as many as he had in his own army, when he was totally and permanently disabled according to the standard which we follow today. He had tuberculous enteritis and concurrent conditions. So far as I know he never asked for anything. I think we have gone very, very far in extending free service, not only to ex-service men, but to men who never saw service, and with the present State government program we are likely to be taking care of ex-service men's grandchildren, or politicians. I do not believe the people of the United States are willing to submit to these conditions. I do not believe we are going to have State medicine, it is time for doctors to wake up to the fact that on account of the mechanical age so many people have had so much leisure thrust upon them that they are spending for everything in the world except medical service. It is in our tradition as a profession to take care of the poor, but it is time for us to get more education over to the people with reference to the rights of the Medical profession, making it possible to preserve our individual integrity in the State. We can't afford to bow our necks and do nothing. We are entitled to a living. If we take care of the poor and sometimes the well-to-do



because they are willing to take the care which they should pay for we won't be making a living. They forget that we are going to be eliminated or placed upon a salary basis which would take out of medicine the spirit and progress. The people should be educated to the needs of our profession. I am heartily in favor of this proposition and hope that it will receive approval."

Dr. B. B. Kies, McAlester: "I am heartily in favor of this resolution that Dr. Reed introduced except for one thing—it doesn't protect that man who was in service and received some injury or disability in the ranks of service and later on has been able to pay for it. When he entered the service he wasn't asked whether he was poor or rich. I feel that if he was injured in the service he should receive care in appreciation for the service that he rendered. This resolution doesn't protect the man who was injured in service and is now able to pay, but who in appreciation of the fact that he did render service should be cared for."

Dr. Neeley: "The Battle of New Orleans was mentioned a while ago. That battle wouldn't have been fought today. It was fought a week after peace was declared. I would like to go Dr. Reed one better and make a motion that the House of Delegates go on record as favoring the absolute abolishment of the Soldiers' Relief Commission."

Dr. Thompson: "That would have to go as an amendment to Dr. Reed's resolution."

Dr. LeRoy Long: "We have been talking a great deal about a problem of the medical profession that the people will have to adjust. I believe that we ought to go into this with a great deal of care. I was not in active service but detached service, Dr. Neeley, but I know something about the pressure that was brought to bear getting men into the service. I know something about how sub-standard men were taken into the army, through my own observation and through conversation with other men. We have to remember all these things. I know too, and you know, about communisms in other directions. You know, every one of you, intimate friends who are willing to draw compensations for alleged incapacities. They can do just as much work as you or I. That must be taken in mind when talking about this. It is perfectly clear in my mind that nobody should receive attention at the expense of the state if he is able to take care of himself. That is the basis of the proposition, and let us start out from that point of view. Every individual not able to take care of himself, the community must take care of him. How does it work out in the organizations of other states, but particularly in Oklahoma? If a person comes to you seeking service, inquire what county he is from and tell him to talk to the County Commissioners and see if they won't help him. He goes back, and often it is impossible to make an arrangement, even with the assistance of the doctors. This Relief Commission was created for the purpose of taking care of any person who served in the army and is now down and out, who is not able to take care of himself. I am in perfect accord with Dr. Reed's resolution; I am not in accord with the amendment made by Dr. Neeley. I believe we ought to let it be understood in this meeting that we are willing to carry out all the traditions of the medical profession, rendering service to the individual who is not able

to take care of himself. I remember the time very well when in connection with medical schools we used to go out and try to get clinical material. Now it is the other way. That shouldn't alter our attitude. Here is a concrete example of what I am trying to say: a young man came up to the clinic several years ago. He had an old Ford car and lived with his widowed mother on a farm. He was an ex-service man. He struck a match one day and had an explosion, and his hands were terribly burned. He was entirely helpless. He stayed out there and couldn't get the county authorities to do anything for him in five weeks, and then it came to the attention of the Relief Commission, and he was sent into the hospital and we took care of him as best we could. Two weeks ago he happened to come to my office, and he was a decent-looking fellow. His hands were crippled but he was able to go back to work. His injury was not received in service, but he had left everything and gone into the army and served his country. When he needed attention he couldn't get it; his mother couldn't do anything because she had nothing to do with, and the county authorities wouldn't help him, and then through the Relief Commission it was possible to do something for this poor fellow. Now, I would like to see this same sort of arrangement kept up. I would like to see, however, a very much more acute discrimination in connection with this matter, and that is where we should bring our pressure to bear. The man who served his country, and who is down and out, and who is in need of aid should be cared for."

Dr. Neeley: "I would like to tell Dr. Long this—when they took me in the army they didn't ask me anything. I was passed to class 5-A. They gave me \$30.00 a month, room and board, paid me this to support myself while in school at Oklahoma City. When I got out they gave me a \$60.00 bonus. It didn't last me over night. They are giving new bonuses now costing around three billion dollars, Congress refused to pay the last half of it. Dr. Long comes before you now and tells you about these pitiful cases that the Oklahoma Relief Commission has helped. I agree with him, I am just as pitiful as he is. But what is the matter with the County Commissioners? Now the indigent case in Oklahoma County, the commissioners are fully authorized to take care of that patient by law. When these soldiers come around giving pitiful spiels tell them to go to the county officials. Let the State of Oklahoma stay out of it. Clause 202-10 U. S. Veterans Regulation is far reaching, gentlemen, it means that any man ill or injured who was in the service of the United States Army at any time can get medical service free of charge. I don't believe in discrimination, and I think 202-10 is a very fair action. The Veterans' Bureau has no right to push any man's claim. If he got that disability in service, I maintain that the Government should take care of it, in agreement with Dr. Kies, but otherwise he ought to shift for himself."

Dr. Weber: "We will vote on Dr. Neeley's proposed abolition of Relief Commission amendment."

Motion lost. (Standing vote).

Dr. Reed: I should like to add one other sentence to this resolution, that is that in anticipation that the officers of the association be direct-

ed to send a copy to the Governor of the State, and to each member of the Legislature."

Dr. Weber: "All those in favor of Dr. Reed's resolution, signify in usual manner."

Motion carried.

Dr. Reed: "I do not want to monopolize the time, but I rise to a point of order or something. In last night's procedure we had some resolutions which had not been presented to the body until presented by the Resolutions Committee. We passed one resolution last night which in my opinion is rather doubtful—the one that makes all doctors in Government service of any kind eligible to membership in this Society. Now, I have in mind an example of where that embarrassed us very much. During the war with a resolution of the State Society, any officer in the army who gave his address as a given county was taken in without question. We took in such a member, and we had a bitter pill on our hands. Many of those who are working on salaries are not interested in organized medicine, they are interested in raising their salaries and furthering their own advancement. I am not real sure that this is a good resolution. I move that we reconsider that resolution."

Dr. Thompson: "The purpose is to let men in the Veterans' Bureau here belong to the State or County Society, at present they can't belong unless they are in legal practice in Oklahoma. Dr. Bates is a member of your County Society."

Dr. Reed: "He was approved through the Board of Censors."

Dr. Neeley: "I would like to ask a question. Is it absolutely necessary for a man to belong, that he be licensed in Oklahoma. That is my idea, and we have eight or ten men in Muskogee who cannot be licensed in Oklahoma but are anxious to belong to the Oklahoma Association."

Dr. A. Ray Wiley: "Personally I see nothing about that motion that could be construed to the detriment of our Medical Society in Oklahoma. I think these men make very excellent members. I think it is a very good motion. They are much more eligible after having passed certain requirements than some men we take in very quickly."

Dr. Thompson: "It is a strange thing to me if these men can have the approval of the American College of Surgeons and can't get into the State Medical Society. They are men who live in other States. They are only here temporarily."

It was requested that the motion again be read.

Dr. Reed: There is a feeling that those who are in associations such as the Veterans' Administration are not interested in organized medicine."

Dr. Neeley: "The Veterans' Bureau men are with you for organized medicine. If you don't let them in, how are they going to get in. How is Dr. S. R. Brown, Muskogee, going to get in, from Atlanta? He is just graduated, passed through internship and not licensed in Oklahoma."

Dr. LeRoy Long: "Why wouldn't this settle the situation? We could provide that Army, Navy, Public Health and Veterans' Bureau men, who comply with our professional and ethical requirements be eligible to membership."

Dr. Thompson: "They have to comply just like anyone else."

Dr. Long: "Dr. Reed mentioned an example. I know who he is talking about. A chiropractor

got into public health service and into our Society and gave us a lot of trouble in Oklahoma City. If we have this cast-iron rule we will be all right. We can provide that they must meet our professional and ethical requirements and that will make it clear."

Dr. Thompson: "It might state that they 'may be admitted upon due application.'"

Standing vote taken on Dr. Reed's motion, resulting in 17 for and 12 against.

Dr. Long: "I offer this as an amendment: 'Providing that members of the medical profession in the Army, Navy and Public Health service comply with the professional and ethical requirements of the State Society.'"

Dr. Thompson: "All Governmental Officers."

Dr. Long was requested to write out his amendment, which is as follows:

#### RESOLUTION

The following addition is proposed to Chapter I, Page IV, Constitution and By-Laws of the Oklahoma State Medical Association. After Section III, Chapter I—Membership, add "Section IV: Any County Society may admit to membership any Medical Officer detailed to duty in the State of Oklahoma from any branch of the Medical Service of the United States Government, provided that Medical Officers in Governmental service comply with professional and ethical requirements of the Association, and who have license in some State of the Union may be eligible."

It was moved and seconded that Resolution be adopted. Motion carried.

Dr. Weber: "I wish to present to you, Dr. T. H. McCarley of McAlester, President-Elect."

Dr. McCarley: "Mr. Chairman, Gentlemen, and friends; I have no speech to make. You are in no mood to receive a speech; I am not capable of making one. I can hardly realize that you have conferred on me this supreme honor. I have been faithful to the Association for a good many years and the State has been good to me. In the position as understudy to your good and genial President here, perhaps I shall be able to carry on in a fairly decent manner when my turn comes to serve you."

Dr. Thompson: "There is still one resolution to be voted upon—the one providing five sections."

Dr. Willour: "May I ask how the officers of the new sections will be elected the first year?"

Dr. Thompson: "The Committee on Scientific work will appoint them the first year."

Resolution voted upon, and carried.

Dr. Weber: "Dr. Anderson has an announcement to make."

Dr. Anderson: "I just want to announce that the Legislative Committee composed of Dr. Fulton, Dr. Reed and Dr. Byrum, the Dean of University Extension wants to see you immediately after this meeting, and Dr. Willour will accompany them to him."

The report of the Committee on Necrology was given by Dr. Ellis Lamb, Chairman:

"This is a sacred hour at which the Oklahoma State Medical Association pauses to pay tribute to our departed



brothers, whose deaths have occurred since our last meeting; their names are as follows:

Dr. B. F. Applewhite, Tecumseh.  
 Dr. J. B. Beckett, Spiro.  
 Dr. Walter C. Bradford, Shawnee.  
 Dr. E. C. Byram, Okmulgee.  
 Dr. C. H. Day, Pawhuska.  
 Dr. P. A. Edwards, Nardin.  
 Dr. E. S. Gooch, Lawton.  
 Dr. E. J. Gray, Tecumseh.  
 Dr. A. L. Gregory, Muskogee.  
 Dr. Alfred Griffith, McAlester.  
 Dr. Robert H. Henry, Ardmore.  
 Dr. Jefferson D. Kiser, Bartlesville.  
 Dr. J. W. Marshall, Shawnee.  
 Dr. Wilbur E. Rammel, Bartlesville.  
 Dr. W. H. Rogers, Tulsa.  
 Dr. J. D. Scott, Holdenville.  
 Dr. J. C. Stephenson, Oklahoma City.  
 Dr. A. L. Stocks, Muskogee.  
 Dr. Charles K. Tillison, Bartlesville.  
 Dr. L. W. Troutt, Afton.  
 Dr. J. W. Tucker, Lindsay.  
 Dr. J. B. Wear, Poteau.  
 Dr. A. C. White, Chickasha.  
 Dr. T. F. Wood, Sallisaw.  
 Dr. E. N. Wright, Olney.

The hand of time moves on and in vain do we call the names of our beloved brothers whom God has called to dwell forever in that eternity that feels no sorrow and knows no end.

While they were here they gave their friendship which we shall cherish as indestructible jewels and when they passed on to a greater realm we felt that priceless pearls had been dropped in the depth of an unfathomed ocean.

They freely donated their mental talents to the profession, which they loved and served so well, that its honor might be raised to a height where ignorance cannot reach or scandal tarnish. The history of good men and honored citizens was their history, the love of kind fathers forever burned in their hearts, they felt the accolade of faith services rendered to their State and the communities in which they resided; they knew the keen passions of ambition to have the Oklahoma State Medical Society excel in all its undertakings. Now as we call their names aloud we hear no response.

Be it resolved that the State has lost good citizens, that their wives and children shall mourn the absence of loving husbands and fathers, and that the Oklahoma State Medical Association has lost honored members.

Be it further resolved that these resolutions shall be spread upon our records, that they be printed in our State Medical Journal, and that copies be sent to the family of each deceased brother."

Respectfully submitted,  
 DR. ELLIS LAMB, Chairman  
 DR. J. S. FULTON.  
 DR. R. M. ANDERSON.

It was moved and seconded that the report on necrology be adopted. Motion carried.

Dr. J. A. Walker, Shawnee: "I move that in

deference and respect to these brothers that the State Society stand in silence for one minute and then adjourn."

Motion carried.

Dr. Willour: "Where will the Society meet next year?"

Dr. Neeley: "I extend the invitation for it to meet in Muskogee next year. We have not had it since 1926."

Dr. Phil McNeill, Oklahoma City: "Oklahoma City extends the invitation for it to meet in Oklahoma City."

Dr. Weber: "Muskogee and Oklahoma City. Are you ready for the vote?"

Dr. Neeley: "I will withdraw the invitation of Muskogee in favor of the invitation to Oklahoma City."

It was then voted to meet in Oklahoma City in 1933.

Meeting adjourned.

C. A. THOMPSON,  
 Secretary-Treasurer-Editor.

### *Editorial Notes—Personal and General*

DR. CLAUDE S. CHAMBERS, Seminole, was recently elected President of the Seminole Rotary Club.

WAYNOKA will have a follow-up clinic about the first of July, according to Dr. Cecil Bryan of the State Health Department.

DR. L. G. DRIVER, Ponca City, read a paper on "Epidemic Meningitis," at a meeting of the Staff of the Ponca City Hospital, recently.

DR. E. D. RODDA, Okmulgee, has returned after nine months study in Vienna. After finishing his work he traveled for three weeks in Italy.

THE LAST MEETING OF GARVIN COUNTY was held May 18th, at Pauls Valley, the program was "Report of the Committee on Cost of Medical Care."

DR. GEORGE N. BILBY, State Commissioner of Health, Oklahoma City, who recently underwent a cholecystectomy is reported as making a good convalescence.

DR. C. E. WALLER, Assistant Surgeon General of the U. S. Public Health, attended the Annual Meeting, representing Surgeon General Cumming, who was unable to be present.

DR. W. H. MILES, Oklahoma City, has placed a special check on dairy herds supplying Oklahoma City with milk in an effort to trace, if possible, the origin of some cases of Malta fever.

DR. H. T. BALLANTINE, Muskogee, Chief Surgeon of the Midland Valley Railroad, tendered a luncheon to local surgeons at the Mayo Hotel, May 25th. Sixteen members were present.

CREEK COUNTY MEDICAL SOCIETY met at Bristow, May 19th. The program "Conditions of the Heart" by Dr. W. J. Trainor, Tulsa, was discussed by Drs. Orange W. Starr and P. L. Lewis, Drumright.

GARFIELD COUNTY MEDICAL SOCIETY met May 3rd at Enid as guests of Dr. T. H. Hinson, and the Staff of the Enid Springs Hospital. Dr. Hugh Jeter and Francis E. Dill, Oklahoma City, presented "Arthritis."

DR. S. R. CUNNINGHAM, Oklahoma City, is to be one of the speakers on Orthopedics at the 1932 meeting of the Pacific Northwest Medical Association, meeting in Spokane the last week in June and the first of July.

COMANCHE COUNTY MEDICAL SOCIETY met at Lawton, April 21st. Dr. E. S. Lain, Oklahoma City, read a paper on "The Latest in Cancer"; while Dr. W. W. Rucks, Oklahoma City, spoke on "The Latest in Pneumonia, Type and Treatment."

OKLAHOMA CITY HEALTH PHYSICIANS have discovered another racket. Patients supposedly suffering from Pellagra have been using yeast, which was supplied them, for purposes other than treatment. It is not difficult to guess to what use the yeast was placed.

KAY COUNTY MEDICAL SOCIETY met April 24th at Blackwell. Dr. W. M. Leslie was host to the meeting. Dr. Geo. H. Niemann read a paper on "Ilius." Dr. Thos. McElroy gave a paper on "X-ray Diagnosis of Cardiac Diseases," while Dr. J. C. Wagner led a round table discussion.

DOCTOR W. W. WELLS AND WIFE, DOCTOR EVA WELLS, Oklahoma City, were guests of the Cooke County Medical Society of Gainesville, Texas, May 10th. Dr. Wells appeared on a scientific program and his subject was "Version with Application of Forceps to the After Coming Head."

KAY COUNTY MEDICAL SOCIETY met May 23rd at Tonkawa. Dr. A. S. Risser read a paper on "Obstructive Lesions." The meeting decided to participate in another course by the Extension Department of the State University at some future date. The staff of the Tonkawa Hospital served refreshments.

WOODS-ALFALFA COUNTY MEDICAL SOCIETY met at Alva, May 17th. The program "Undulant Fever" as presented by Dr. H. H. Turner, Oklahoma City, with slide illustrations; by Dr. J. W. Mercer, Cherokee. Dr. J. B. Eskridge, Oklahoma City, presented "Application of Forceps" and "Podalic Version."

OKLAHOMA STERILIZATION law will be tested before the Supreme Court if necessary according to Mr. Richard H. Cloyd, Norman attorney, who is opposing sterilization of Samuel W. Main, a patient confined at the State Hospital. The law itself provides that these cases be amply protected before any action is taken.

DR. JOHN R. CALLAWAY, Secretary of Garvin County Medical Society writes the Journal a very complimentary letter upon the pleasure that Society derived from using the State Association films shown at Pauls Valley in April. Among the visitors were Dr. Scott, Norman; Drs. Holly, Kilfoy, Jacobs and Postelle, Oklahoma City.

DR. NEWTON RECTOR, Hennessey, 94 years young, did not find his age any bar to attendance at the Annual Session. Dr. Rector has been practicing medicine for more than 60 years. A gentleman of the fine old school he was widely interviewed, photographed and given great consideration by his physician friends as well as the Tulsa papers.

"RADIANT LIGHT is a very powerful force and devastation and disaster when used for treatment by anyone who is not well trained and experienced may follow its use," was the advice of Dr. L. A. Turley before the Cleveland County Medical Society recently. Dr. Turley went into considerable discussion of the matter beginning with the discovery of X-rays in 1895 and radium by Madame Curie in 1899.

OSAGE COUNTY MEDICAL SOCIETY held their monthly meeting at Pawhuska, May 2nd, the guests of Drs. Paul H. Hemphill and M. E. Rust at the home of Dr. Hemphill. The evening's discussion was on "Neoplasms" which was discussed by the guest speakers from the Diagnostic Clinic of Kansas City Mo. The speakers were Drs. F. C. Narr, director of the Diagnostic Clinic; R. L. Hoffman, Urologist; J. D. Montgomery, Surgeon; R. C. Davis, Internist and I. H. Lockwood, Roentgenologist. Others present were Drs. H. C. Weber, president of the Oklahoma State Medical Association and Dr. W. A. Howard, Chelsea.

RADIUM has always been dangerous, concludes even the layman. That is the beginning of an editorial in the Bartlesville Examiner, April 6th. The Examiner notes that "even the most skilled and experienced have difficulty in handling it safely when using the most advanced methods and equipment." The Examiner concludes, "it ought to be easy to show the sick that they can't afford to take chances with self treatment, fakirs or amateurs. The so-called 'radium spring or well water' is not dangerous. It is termed 'radio active' but contains no essential free radium.

OKMULGEE COUNTY MEDICAL SOCIETY met at Henryetta May 16th. After a dinner and transaction of official business Dr. W. M. Jones, Tulsa, read a paper on "Radical Frontal Sinus under Local Anesthesia." The paper was widely discussed. Due to lack of time a paper by Dr. F. S. Watson, Okmulgee, entitled "High-Lights of Surgical Advance," was passed until some other meeting. Dr. W. C. Vernon, delivered an address on "Wien oder Wein, Weib, und Gesang." That shows that Dr. Vernon must have learned some Dutch during his recent European trip. The meeting was well attended.

THE MUSKOGEE COUNTY MEDICAL SOCIETY met on May 23rd, 1932, with an attendance of thirty-one to hear a Symposium of



Syphilis. Essayists were: Dr. Floyd E. Warterfield, "History of Syphilis"; Doctor Carl L. Brundage, Oklahoma City, "Primary Syphilis, Diagnosis and Therapy"; Doctor S. R. Brown, U. S. Veterans' Hospital, Muskogee, Okla., "Tertiary Syphilis, Its Manifestations and Therapy"; Doctor Phil M. McNeil, Oklahoma City, "Visceral Syphilis, Its Therapy"; Doctor Felix Adams, Vinita, Oklahoma, "Neuro-Syphilis, Its Manifestations and Therapy."

The Muskogee County Medical Society voted to discontinue meetings until the second Monday in September.

The Inter-City Relationship Committee reported that the following Counties have been contacted for Reciprocal Programs, Tulsa County, Pittsburg County, Okmulgee-Okfuskee County, and Sebastian County, Arkansas. Plans are under way to exchange programs with these counties this next year, or the fall and winter. It is believed that these programs will greatly increase interest locally and have a tendency to promulgate friendship and good will between these County Medical Societies.

#### TENTATIVE CENTERS EASTERN OKLAHOMA POST-GRADUATE MEDICAL COURSE DEGENERATIVE DISEASES, JUNE 13 TO JULY 15

##### First Week

Diet and Degenerative Disease. Clinic. Dr. I. I. Lemann, New Orleans, Louisiana.

Myocardial Diseases. Clinic. Dr. Tom Lowery, Oklahoma City, Oklahoma.

##### Second Week

General Arterial Disease and Hypertension. Clinic. Dr. Ellsworth S. Smith, St. Louis, Mo.

Degenerative Disease on Basis of Food Deficiencies, Pellagra, Pernicious Anemia, etc. Clinic. Dr. J. T. Martin, Oklahoma City, and Dr. A. W. White, Oklahoma City.

##### Third Week

Peripheral Vascular Disease. Chronic Rheumatic Disease. Clinic. (To be selected later).

Vascular Disease of the Brain. Clinic. Dr. Harry Wilkins, Oklahoma City.

##### Fourth Week

Bright's Disease. Clinic. Dr. J. B. McElroy, Memphis, Tenn.

Coronary Disease. Angina Pectoris. Clinic. Dr. A. B. Chase, Oklahoma City.

Vinita .....	June 13, Monday, 2:00 P. M.
Muskogee .....	June 13, Monday, 7:30 P. M.
Okmulgee .....	June 14, Tuesday, 7:30 P. M.
Holdenville .....	June 15, Wednesday, 7:30 P. M.
McAlester .....	June 16, Thursday, 7:30 P. M.
Poteau .....	June 17, Friday, 7:30 P. M.
Vinita .....	June 20, Monday, 2:00 P. M.
Muskogee .....	June 20, Monday, 7:30 P. M.
Okmulgee .....	June 21, Tuesday, 7:30 P. M.
Holdenville .....	June 22, Wednesday, 7:30 P. M.
McAlester .....	June 23, Thursday, 7:30 P. M.
Poteau .....	June 24, Friday, 7:30 P. M.
Vinita .....	June 27, Monday, 2:00 P. M.
Muskogee .....	June 27, Monday, 7:30 P. M.
Okmulgee .....	June 28, Tuesday, 7:30 P. M.

Holdenville .....	June 29, Wednesday, 7:30 P. M.
McAlester .....	June 30, Thursday, 7:30 P. M.
Poteau .....	July 1, Friday, 7:30 P. M.
Vinita .....	July 11, Monday, 2:00 P. M.
Muskogee .....	July 11, Monday, 2:00 P. M.
Okmulgee .....	July 12, Tuesday, 7:30 P. M.
Holdenville .....	July 13, Wednesday, 7:30 P. M.
McAlester .....	July 14, Thursday, 7:30 P. M.
Poteau .....	July 15, Friday, 7:30 P. M.

#### DOCTOR ANDREW WARREN HARRIS

Doctor A. W. Harris, born in Wehackee, Alabama, December 3rd, 1875, a graduate of Memphis Medical College in 1907, a member of the Muskogee County Medical Society since 1908 died at his home on May 26th, 1932, following a short illness.

Realizing the inadequacy of language to state the feeling of loss caused by the passing of a close associate in a work entering into the most intimate relationship with those we serve, your committee suggests placing upon the records of the Muskogee County Medical Society and sending copies to the close relatives the following simple resolutions.

FIRST, An expression of our sincere appreciation of his good fellowship his whole hearted co-operation, his inexhaustible zeal in all of his work and undertakings, whether remunerative or not. His loyal untiring efforts in the speedy accomplishment of any task assigned to him by the Muskogee County Medical Society. We shall indeed miss him.

SECOND, An expression of sympathy to his wife, father, sisters and brothers and to his many friends.

Signed,

J. T. NICHOLS, M.D.

HOWELL A. SCOTT, M.D.

JAMES G. RAFTER, M.D.

#### DOCTOR E. S. GOOCH

The fact of the uncertainty of life and that we are about our usual task today and tomorrow gone from earth's labors is exemplified by the sudden death, April 14th, 1932, of Dr. E. S. Gooch.

The members of the Comanche Medical Society deeply mourn the loss of Dr. E. S. Gooch our co-worker, beloved friend and one of our members for many years. He has been a faithful and willing worker in our midst, having an unusually brilliant mind and a studious nature. He always brought to our meetings something of value, and with his pleasing faculty of delivery would make it unusually interesting.

He was a man of many qualifications. His happy disposition, made it easy for him to meet and make friends. Really to know him was to be his friend. He was of a

generous nature, always ready to do his part and greet everyone with a cheerful word and a smile.

Be it Resolved; That we extend to his brother Dr. L. T. Gooch and other relatives our heart felt sympathy in their sorrow and grief and mourn with them our mutual loss.

Be it further Resolved; That these Resolutions be spread upon the records of the Comanche County Medical Society; that a copy be sent to the Oklahoma State Medical Society; that a copy be sent to his immediate relatives.

E. BRENT MITCHELL, M.D.  
G. S. BARBER, M.D.  
W. J. MASON, M.D.  
Committee.

methods. Sterility was tested aerobically and anaerobically before use. Recently solid substances have been obtained from the filtrates, which to date are of unknown composition. Chemical analysis and animal experimentation are now being attempted to prove the nature of these healing substances. The vaccine used was an autogenous or polyvalent suspension of killed organisms counted and fortified by the active principle and tested for sterility. A vaccine of killed organisms in saline solution without the active principle fortification did not improve sufficient. One hundred cases of chronic osteomyelitis, infected wounds and compound fractures have been treated by this principle and vaccine with or without the use of live maggots, and 88 per cent of the cases have been healed. Chronic leg ulcers, sinus infections and mastoid infections are now being treated by this active principle and vaccine. Results cannot yet be stated. Three cases of long-standing middle ear disease have been healed.

#### TREATMENT OF CHRONIC OSTEOMYELITIS, WITH ESPECIAL REFERENCE TO USE OF MAGGOT ACTIVE PRINCIPLE

According to S. K. Livingston and L. H. Prince, Hines, Ill. (Journal A. M. A., April 2, 1932), it was formerly supposed that maggots were effective in osteomyelitis because of their mechanical action—rapid movement and the ingestion and digestion of bacteria and necrotic material, thus rendering such matter inert, stimulation of a rapid outpouring of blood serum, which is healing, and the rapid increase of the ph of the wound. When observed closely, it has been noted that in the early stages of treatment (after the first to third applications) the maggots will live until replaced. As the treatment continues, the maggots will live for a decreasing period and after the fifth application the maggots will live only a few hours. Death occurs because the ph of the wound has increased and because some substance has been produced through the contact of the live maggots with the tissues which so increases in virulence that with time the maggots are killed by its potency. For want of a better name, the authors have called this substance a therapeutic active principle. All through the work their attention was continually focused on the fact that it was not mere mechanical action of the maggots that was primarily responsible for the beneficent results obtained by their use. Animal experiments showed that this additional agent which was developed through the contact of the maggots with the living tissues was, in itself, a curative agent. That an additional agent was probable in effecting a cure seemed clearly demonstrated by the use of filtered extracts from the bodies of crushed larvae. These observations pointed clearly to the presence of some substance which, in itself, was sufficiently powerful to overcome infections and permit a normal ph balance to be established. Their opinion was further warranted from the fact that filtered uncontaminated products derived from the bodies of larvae in culture when brought into contact with pyogenic organisms in petri dishes destroyed the cultures. The active principle was obtained by grinding live maggots in sterile saline solution and filtering the product through coarse and fine Berkefeld filters. Due care was taken to preserve a sterile environment to ensure sterility and standardization for potency of the product by standard

#### SEMINAL VESICLES: NEWER INSTRUMENTAL METHODS IN DIAGNOSIS AND THERAPEUTIC MANAGEMENT

Joseph F. McCarthy and J. Sydney Ritter, New York (Journal A. M. A., Feb. 27, 1932), state that their objective has been, by means of improved and rational technical procedure, to render the seminal vesicles accessible to the same kind of study as, for example, is now the renal pelvis; in other words, to bring it within the spotlight—the searching scrutiny of orderly scientific investigation. To facilitate the catheterization of the ejaculatory duct, it is essential that an instrument be used which will direct the catheter to take the same relative course that the ejaculatory duct takes through the verumontanum and prostate gland. For this purpose the McCarty ejaculatory duct catheter carrier, with spring wheel deflector, is necessary. It is composed of three parts, the sheath, obturator, panendoscopic telescope and the ejaculatory duct catheter carrier. The sheaths are a number 24 F. and a number 26 F. whose circumference is more circular than the ordinary panendoscopic sheath. The telescope is slightly modified to admit this carrier, a new departure in urology, for with its use catheterization of the ejaculatory ducts and therapy to the seminal vesicles in indicated cases is rendered a simple procedure. Catheterization of the ejaculatory ducts together with the collection of the uncontaminated seminal secretion, generally speaking, should be reserved for refractory cases of seminal vesiculitis not responding to the usual therapeutic measures. The specific indications are as follows: (1) Chronic arthritis—when other foci have been eliminated and the seminal vesicles are suspected; (2) persistent chronic posterior urethritis with evidence of verumontanitis and microscopic evidence of pathologic changes in the expressed secretion; (3) vague indefinite backaches—undetermined by the usual measures; (4) impotencia; (5) sterility, and (6) sexual asthenia with large palpable vesicles to determine patency of the ejaculatory ducts.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
Henry H. Turner, M.D.  
319 Osler Medical Building, Oklahoma City

**Ascending Paralysis Resulting from the Drinking of "Jamaica Ginger."** Werden, Delbert H., *Annals Int. Med.* 5:1257, April, 1932.

This author reports a rather thorough study of fifty cases of "jakeitis" occurring in Los Angeles county. He emphasizes the difference in the findings in this series of cases from those already reported by other authors. He believes the symptoms produced are due to the presence of triorthocresyl phosphate, which causes degeneration of the myelin sheath, the axis cylinders and motor cells.

Cramps, soreness, and stiffness of the calves of the legs were the first symptoms in the majority of the cases, appearing within an average of 5.5 days after the ingestion of the "Jamaica ginger." This was followed by weakness of the feet and legs, which progressed to the thigh.

He states that, while most observers mentioned only the footdrop in this disease, he is of the opinion that plantarflexion is impaired almost simultaneously and equally with dorsiflexion. Weakness of the hands consistently appeared on an average of ten days from the onset of the initial symptoms.

His conclusions are as follows:

1. The disease can be definitely diagnosed on the physical findings alone. The history is often unreliable and is relatively of little importance.
2. The flexors of the extremities are affected almost equally with the extensors.
3. Sensation is seldom affected.
4. The lesion in Jamaica ginger paralysis is more than a neuritis. Clinical and pathological findings indicate that the process is an ascending degeneration, the extent of which is proportional to the amount of the chemical absorbed from the intestinal tract, and is manifest clinically by changes in the motor power of the extremities, and in the various deep and superficial reflexes.
5. Although impairment of vision is not elicited subjectively, the disease frequently delays the pupillary light reflex, often produces irregularity of the pupils, and occasionally gives an optic neuritis.

**The Dehydration Method in Epilepsy.** Cameron, D. E., *Am. J. Psychiat.* 11:123, July, 1931.

This author studied the effects of dehydration on twelve cases of epilepsy, and concludes that the method is of little or no value in the treatment of this condition. His conclusions are not in accord with those of American investigators

and, inasmuch as he admits that many of his patients were noncooperative; stole water from other patients; and were advanced deteriorated types, it would seem that this contribution is of little value.

**The Organization of Treatment for Infantile Paralysis.** Levick, G. Murray, *Brit. M. J.* 2:652, October, 1931.

This author discusses the treatment of acute poliomyelitis and that of the after-effects. He states that during the acute attack anterior poliomyelitis antitoxin should be given immediately, but that it is probably worthwhile to give it any time during the presence of fever. It is important to obtain correct posture of the affected parts in the beginning, and this is best accomplished by the use of slings. Though there is usually complete destruction of the anterior horn cells, he believes many of them are incapacitated without complete destruction and that many of them may recover, though their axons have degenerated. Regeneration of some of the axons may continue for a year or more; therefore, it is important that after-treatment should be continued over a long period. The affected muscles should be placed in correct posture, and properly administered electrical treatment may be of great assistance, though he warns that if improperly administered it may do much harm. He advises against the use of excessive faradic stimulation and recommends the single stimulus of an interrupted galvanic current during the early stages of recovery. Careful massage is also an important part of the treatment.

He believes that in cases where the muscles of the trunk are involved recumbent positions should sometimes be maintained for many years in children, as this is the only way to prevent serious spinal deformity.

**Vascular Spasms: A Clinical and Experimental Study.** Riser, P. Meriel and Planques, *Encephale* 26:501 (July-Aug.), 1931. *Abstr. Arch. Neur. and Psychiat.* 27:938, April, 1932.

This long article presents several clinical cases, followed by some experimental researches on the question of the appearance of vascular spasms in the brain. The authors' conclusions are briefly as follows:

The clinical studies demonstrate the relative frequency of transitory deficit syndromes in the region of the brain or medulla, characterized by sudden appearance and disappearance, by duration from a few minutes to several hours, and usually preceding a definite lack such as hemiplegia or cortical hemianopia. For explaining these facts the hypothesis of a fleeting ischemia is the most satisfactory. These vascular spasms may attack the great trunk of the sylvian artery, before the formation of collaterals or one of the collaterals. This hypothesis of arterial spasm is rendered more probable by certain anatomicoclinical ob-

servations. Thus, the nutrient arteries that have been attacked by arteritis can become and remain permeable. The nerve tissue supplied by these vessels may develop a certain tolerance toward the relative ischemia.

Experimental proofs in animals and even in man show that abrupt transitory local spasms of cerebral arteries coursing through the subarachnoid space is possible. The usual pharmacologic agents, such as epinephrine and ephedrine, do not produce an appreciable diminution of arterial caliber, but it is well known that mechanical or electrical stimulation is sufficient to produce pronounced local spasms lasting for considerable periods of time. Direct observation and microphotographic studies testify to this. The hypothesis of Foix, in which it is supposed that the lesion of arteritis itself plays an exciting role in producing such temporary spasms, is considered probable by these authors.

They conclude that they would not account for all transitory paralyses by arterial spasm. Thus, among other things, sudden drops in arterial tension may be causative of such conditions.

**Blood Pressure and Goiter.** Askey, J. M. and Toland, C. G., California and West. Med. 34:80, 1931. Abstr. Endocrinology 16:103, 1932.

This paper is based upon the study of 550 case records. Regardless of age a systolic blood pressure of above 150 and a diastolic of above 110 is regarded as high, while a systolic below 110 is regarded as low. Of the patients observed 90% were women. Thirty and six-tenths per cent had hypertension; 2% had elevation of blood pressure above the normal for their age but not above 150. Five and four-tenths per cent had low blood pressure. The percentage of hypertension was slightly higher in the toxic adenoma than in the exophthalmic goiters. The basal metabolic rate of this group, consisting both of hyperthyroidism with adenoma and with hyperplastic thyroid was plus 33%. In the exophthalmic goiter patients with hypertension the pulse pressure increased more than in the adenomatous patients. Individually there was no definite correlation between the height of the B. M. R. and the height of the pulse pressure. In other regards, comparison of 100 records of toxic goiter with hypertension with another with normal pressure showed a greater tendency of toxic adenoma toward hypertension. The greater the duration of thyrotoxicosis the more likely hypertension will develop.

**The Growth Hormone.** Engelbach, William, Endocrinology 16: 1, 1932.—Author's Summary.

The author reports two cases of hypopituitarism, showing marked deficiency of both the growth and sex hormones. One subject of infantile hypopituitarism is four years of age, and the other is a juvenile aged nine years and six months. This subject was given replacement treatment of Evans' purified growth hormone. Although Evans discovered the growth hormone in 1922, this is the first human being to whom it has been given. This has been due to the difficulties in its purification and separation from the pituitary sex hormone. This paper discusses the incidence, symptomatology, and diagnosis, as well as the treatment of insufficiency of the anterior lobe of the hypophysis during the pre-adolescent age. The author contends that hy-

popituitarism during infancy and juvenility is a very common endocrine disorder. Emphasis is placed upon the case of diagnosis of deficiency of the growth hormone, which is made by comparison of actual measurements of infants and juveniles with standard measurements for age and sex, such standard measurements being included in this article. The subject who was given replacement of Evans' growth hormone was a girl nine years and six months of age who had had an arrested physical development for a number of years previous to institution of such treatment. This hormone, which Professor Evans had tested out very carefully by prolonged animal experimentation, was given first in very minute doses and gradually increased until 10 c.c. was given intramuscularly. The reaction to this treatment during the nine months and seventeen days that it was administered showed that there was an increase of 2.7 inches in height; 7.5 pounds in weight; 0.6 inches in circumference of the head; 1.7 inches in the chest, and 1.3 inches in the abdomen. The reaction to treatment during this age is very favorable.

## TUBERCULOSIS

Edited By

L. J. Moorman, M.D.  
304 Osler Bldg., Oklahoma City

**Obstructive Massive Atelectasis of the Lung.** Pol N. Coryllos, M.D., and George L. Birnbaum, M.D. Archives of Surgery, February, 1928.

The results of experimental work on 56 dogs are given in this paper. The problems investigated were: (1) Phrenicotomy unilateral and bilateral; study of the respiratory rhythm and the intrapleural pressure; obstruction of bronchi in phrenicotomized animals on the same and on the opposite side of the paralyzed diaphragm. (2) Obstruction of a bronchus and investigation of atelectasis under direct observation, the animal being in a box with oscillating negative pressure. (3) Obstruction of a bronchus with an obstructing elastic balloon and observation of the evolution of the collapse by fluoroscopy and serial roentgenograms. Autopsies were performed and sections made on all the animals. A careful study of the clinical symptoms, the physiologic phenomena, the roentgen-ray observation on serial pictures and the pathologic and bacteriologic condition of the animals convinced the authors that: (1) The determining cause of massive atelectasis of the lung, whether it is post-operative, spontaneous or secondary to obstruction by a foreign body or to infection, is always a complete obstruction of a bronchus or compression of the lung (by effusion or pneumothorax) which abolishes the effects of the intrapleural negative pressure. (2) The obstruction of a bronchus in post-operative cases is due to a plugging by mucus which may be present at autopsy or which may have been expelled before death. It is possible that the "plugging of a bronchus" may be effected by thin secretion occluding its lumen. As an aid to the accumulation of mucus are pain, paralysis of the respiratory muscles, general cachexia, recumbency or narcotics or any other factors tending to diminish respiratory movements or abolish cough. (3) Spastic contraction of the bronchial muscle does not produce atelectasis but does produce emphysema. (4) The existence of so-called



"angioneurotic edema" of the lung has never been proved, clinically or experimentally. In the cases of acute anaphylatic shock in the guinea-pig, emphysema and not collapse is produced even when edema occurs. (5) Atelectasis may predispose to infection by fixation in the parenchyma of the lung of septic emboli or microbes present in the blood.

The authors conclude that when simple methods, such as shaking or changing the position of the patient are not quickly successful, the obstructing agent must be removed by bronchoscopy with aspiration or extraction in order to hasten recovery and to avoid further septic complications such as bronchopneumonia, pneumonia or abscess.

**Bronchial Obstruction.** Pol N. Coryllos, M.D., and George L. Birnbaum, M.D. *The American Journal of Roentgenology and Radium Therapy*, November, 1929.

Atelectasis, post-operative pneumonia and lobar pneumonia (in their lobular, lobar or massive varieties) are produced by the same mechanism. This identity in pathogenesis is proved by the gross and microscopic appearances, their bacteriology, their circulatory disturbances, their evolution and the modifications in the pulmonary gaseous exchanges occurring in them. The differences between them in local and general symptoms, roentgenographic signs and bronchoscopic findings are in degree only. They are all due to a factor of great importance—bronchial obstruction. Any interference with the free drainage of the bronchial tree will cause lesions the nature, extent, importance and evolution of which will depend upon the degree and duration of the obstruction and the nature and virulence of the microbes present.

The rational treatment of these conditions should be based upon their etiology and, as in every other obstructive lesion, should aim to relieve the obstruction and re-establish free drainage in the bronchial tree. Carbon dioxide inhalations in 5 to 10 percent concentration seems to possess a specific action against pneumococci pulmonary infections and according to experimental and clinical data, can be used both as a preventive and a curative agent.

The authors demonstrate the importance of roentgenography in experimental investigation on atelectasis and pneumonia.

**The Treatment of Pneumonia by Inhalation of Carbon Dioxide.** Yandell Henderson, Ph.D., and Howard W. Haggard, M.D., New Haven and Pol N. Coryllos, M.D., and George L. Birnbaum, M.D., New York with the Collaboration of Ellen M. Radloff, B.S., Cape Town, South Africa. *Archives of Internal Medicine*. January, 1930.

The fact that little progress has been made during the past 50 years in the prevention and cure of pneumonia, in spite of much study, suggests that some factor other than the pathogenic organisms is involved. This factor—occlusion of an infected organ and lack of drainage—being one which ordinarily does not concern the internist, has been overlooked until recently when it has been discovered through the study of post-operative pneumonia.

Some degree of pulmonary collapse or atelec-

tasis follows at least 10 percent of all surgical operations, especially abdominal operations where breathing is impeded by pain. It was observed that the plugging or obstruction of a bronchus induced the same condition which was followed by pneumonia. In pneumonia it is the blocking of the lung airways, bronchi or bronchioli, by plugs of thick, sticky, secretion which is the critical morbid factor producing atelectasis and the conditions characteristic of an undrained infection. This atelectasis is prevented and relieved and the risk of pneumonia eliminated by the inhalation of carbon dioxide. Postasphyxial pneumonia following carbon monoxide asphyxia is also prevented by the use of 5 percent carbon dioxide in oxygen. It is well known that if the lungs are not fully distended after birth pneumonia is likely to develop. It has been learned recently that the inhalation of 5 percent carbon dioxide is much more effective in overcoming asphyxia in the newborn than the old custom of making the child cry. Success with this therapy for the relief of pneumonia depends on administering the inhalation as early as possible. If medical pneumonia is thus treated early enough, it appears probable that the results may be as effective as those already attained in post-operative and post-asphyxial pneumonia.

The following experiments reported by the authors demonstrate these facts:

(a) Atelectasis that is induced experimentally in dogs by blocking a bronchus is quickly cleared up and the lung is redistended by the deep breathing induced by inhalation of carbon dioxide in proper dilution.

(b) Pneumonia that is induced in dogs by the insufflation of a virulent culture of pneumococci is generally overcome, the lung redistended and the animal is restored to health by inhalation of carbon dioxide sufficient to cause deep breathing and continued until the pneumonia area is cleared.

**Treatment of Bronchiectasis—Multiple Stage Lobectomy.** Pol N. Coryllos, M.D. *Archives of Surgery*. May, 1930.

The extensive use of iodized oil has shown an unsuspected frequency of bronchiectasis, brought about a separation of this disease from tuberculosis, chronic empyema with bronchial fistula, chronic bronchitis and some forms of asthma, and more important, has enabled investigators to study the disease from its earliest forms when neither symptoms nor other methods of study give any information. Its great frequency in childhood following measles, scarlet fever and especially chronic inflammation of the paranasal sinuses has been established by this method and it has thus come to be recognized that bronchiectasis is a common pulmonary disease. Since the disease assumes a wide variety of evolutionary phases and clinical forms and treatment is thus a variable proposition, it is necessary to distinguish the various clinical varieties of bronchiectasis; (1) Bronchitic form with no classic symptoms, no involvement of the lung parenchyma and only slight bronchial lesions present—only revealed by roentgenogram following the injection of iodized oil. (2) Early uncomplicated bronchiectasis with definite bronchial lesions but still limited to the bronchi. X-ray shows cylindric or saccular dilations of the bronchi; clubbing of the fingers is present but there is no foul sputum,

fever or loss of weight. The lesion is generally unilateral, or at least more marked in one lung and especially in one lobe. (3) Complicated bronchiectasis with more or less advanced pneumonitis or small multiple bronchiectatic abscesses presenting the classic symptoms—foul sputum, persistent cough, more or less septic appearance, intermittent fever, loss of weight and markedly clubbed fingers. (4) Bronchiectatic abscess, found unilobar, unilateral or diffuse according to the distribution of the disease. There are various other forms depending on the pathology of the disease, the age of the patient and the evolution of the lesions. The distinctions in form are certainly schematic for bronchiectasis is a progressive disease which, untreated, tends to pass gradually from one form to another in most cases.

Treatment of the paranasal sinuses together with hygienic measures, a dry hot climate and postural and bronchoscopic drainage will check the progress in many cases of the bronchitic form. In early uncomplicated bronchiectasis, besides these measures, pneumothorax, phrenicectomy or even a thoracoplasty associated with postural or bronchoscopic drainage of the bronchi and antispasmodic treatment when necessary, have given good results. While these suggestions apply especially to unilateral cases, it has been shown that in many cases of bilateral disease in which there is a decided predominance on one side, the less affected side is greatly improved by the treatment of the more affected one. In the advanced form with pneumonitis and multiple bronchiectatic abscess, if the general condition of the patient permits, there is but one curative treatment—surgical exeresis of the diseased portion by lobectomy, cautery, pneumectomy or exteriorization and ligation of the involved parenchyma of the lung.

Bronchiectasis being a chronic and slowly progressive disease which is amenable to progressive treatment, this treatment should be applied even to advanced cases and the patient thus prepared for the more radical surgery. If this is done indications for lobectomy will become less frequent and the present prohibitive mortality following the operation will be markedly decreased. Delay may be more dangerous than surgery since if an operation is necessary it is much better to do it while the patient is still in good general condition. The author prepares his patients for the final stage by pneumothorax, phrenicotomy, graded thoracoplasty and, in some cases, ligation of the corresponding pulmonary artery, the results following this method being much more satisfactory than those following a one-stage lobectomy. Death during or just after lobectomy may be due to: (1) shock, cardiac failure or pleural shock; (2) embolism (air or septic); (3) hemorrhage during or after operation; (4) increased pleural pressure during the first days following operation; (5) septic pleurisy and (6) septic mediastinitis.

A detailed account of the author's method of preparation and of operation is given together with a report of two cases chosen because the operations in both cases were performed over two years ago. The results were excellent in both cases.

**Factors Concerned in the Prognosis of Pulmonary Tuberculosis.** Paul H. Ringer. *Southern Medical Journal*, March, 1932.

Prognostic attitude depends upon: (1) History;

(2) Physical signs; (3) X-ray; (4) General condition of patient; (5) Economic situation and intelligence of the patient.

History is not so important in prognosis as it is in diagnosis although a history of many tuberculous deaths in a family makes the forecast more guarded while one of many near relatives recovering from the disease can be assumed to make a more favorable outlook.

Physical signs are uncertain and subject to interpretations by different observers so cannot be relied on entirely in estimating an individual's future progress or regress.

X-ray is of great value in the study of lung conditions but depends upon skillful interpretation of films. It is felt that, on the whole, those patients usually do best whose serial roentgenograms show no further change; prognosis being more uncertain as long as they reveal a change in the process either for better or for worse.

General condition of the patient is more important in prognosis than history or physical signs as it gives a better idea of what is going on at any particular time and just how the patient is reacting to his involvement.

The economic situation and the intelligence of the patient are extremely important factors since 2 to 4 years of working incapacity are often required to achieve apparent arrest. This makes it financially impossible for many patients to recover since even our state, county and municipal sanatoria are rarely financially able to keep a patient more than a year or 18 months. Intelligence too plays a large part as the patient must understand his condition in order to cooperate in his treatment.

We now come to the two most important factors in the ultimate outlook of the patient: (1) Virulence of infection: (2) Degree of resistance. While we actually know very little about infection and resistance, we do know that it is remarkably uniform in its virulence and the virulence tends to remain about the same in any individual case, though the structure of the tubercle and its resistance to stress varies and though the number of infecting bacilli varies widely. We also know very little about resistance and, in spite of Krause's extensive work, immunity, allergy and activity remain very hard to estimate. Until these problems are solved it will remain impossible to explain the common occurrence on an extensive X-ray picture with an excellent general condition, or the patient with few physical signs who presents evidence of grave toxemia. It will also remain impossible to tell when a change in condition is going to take place so that prognosis will necessarily remain uncertain.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
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**Some Perforations of the Sigmoid of Internal Origin (Des Perforations de l'Anse Sigmoïde d'Origine Interne)** by G. Aigrot, *La Presse Médicale*, March 2, 1932.

Only perforations having their origin in the lumen of the sigmoid are considered.

**1. Perforations Due to Foreign Body in Sigmoid:**



(1) A workman of sixty had violent pain in left lower abdomen about 10:00 A. M. Pain became more and more severe. There was vomiting and obstipation. First seen by Aigrot next day at 5:00 P. M., temperature 103.2, puffiness in left iliac fossa, muscular rigidity, pulse 120, cul-de-sac painful to touch.

Operation per incision in left iliac region disclosed a perforation 1 cm. in diameter in sigmoid through which the tooth of a comb protruded. Much feces in peritoneal cavity, with extensive peritonitis, there being no protective adhesions. Perforation closed. Drainage. Death the following morning in the midst of a fulminating peritonitis.

## 2. Perforations from Ulcers:

(1) Man of 65. Left inguinal hernia for some time. Five or six days before coming to hospital had good deal of pain in region of hernia, but being able to expel gas did not call a physician. Physician saw patient the day he entered hospital. There was swelling, redness, oedema, tenderness, in left inguinal area. Temperature 103. Operation disclosed a small abscess surrounded by adhesions, and at the bottom of the abscess a perforation, the diameter of a fifty centime piece (about size of dime) in the sigmoid. Around it the pathology was characteristic or simple ulcer of the large intestine described by Quenu and Pierre Duval in 1902. Suture and drainage, followed by recovery.

(2) A vigorous young man of 28, had sudden agonizing pain in the umbilical region about 3:00 P. M. At the hospital five hours later crying out with pain, notwithstanding hypodermatic injection morphine. Legs drawn up, abdomen like wood. No fever. Temperature 100. Diagnosis, perforation stomach.

Immediate operation disclosed normal stomach, duodenum, gall bladder, appendix, but there was a large perforation of an ulcer of sigmoid from which much fecal material was discharged. The affected sigmoid was brought to outside as in colostomy, drains placed in abdomen. The patient died the next day.

In this case there was a history of a violent kick in the umbilical region of the abdomen by a horse six months before. Aigrot remarks that this fact can be taken as credible since there was no insurance.

The description of the various forms of simple ulcer of the large intestine by Duval is quoted: "The form of the ulcer may be oval, round, irregular, jagged borders or perpendicular borders as if fashioned by a punch; they are thick, calloused, the base of the ulcer indurated and grayish garnet; around the ulcer the mucous membrane is souple and its confines even rose colored and without any marked alterations."

## 3. Perforations Due to Diverticula:

(1) Young girl of 15. Pain in left iliac region, fever and signs resembling appendicitis. Admitted to hospital eight days later with mass in left iliac region, temperature 103.2. Rectal touch showed mass high. Incision in left iliac region. Large abscess, pus, fecal odor, a sloughing diverticulum 5 cm. long in bottom of abscess. Ligation of base, stump inverted, drainage. Recovery in five weeks.

(2) Another case exactly similar in young girl of same age is reported.

(3) A woman of 66, had pain in the right abdomen, soon followed by a temperature of 103. A year before there had been an attack of abdominal pain, followed by jaundice.

From day to day the condition became more grave. Admitted to hospital on the ninth day. At that time great distention of abdomen, vomiting, partial intestinal occlusion. The tentative diagnosis was suppurative cholecystitis with leakage and abscess in right lower abdomen. Operation revealed an abscess communicating with a gangrenous diverticulum of sigmoid, with leakage of fecal material at base. The cecum and cecal appendix formed the roof of the abscess. The base of the diverticulum was ligated and some gauze wicks placed in abscess cavity. The patient died six hours after operation.

(4) An old man of 80, came to hospital forty-eight hours after beginning of attack in which there were vomiting, absence of gas per rectum, pain and swelling in connection with a left inguinal hernia. The pulse was good. Tentative diagnosis, strangulated hernia. The sac was opened. Pus and liquid feces escaped, the latter coming from a perforation of a loop of sigmoid at the base of a short diverticulum that had the appearance of a very small walnut. It was gangrenous at one point, but for the most part was glued to sigmoid. This mass was removed by dissection, the opening in sigmoid closed, the raw area peritonealized, and a drain put in. There was rapid recovery.

## 4. Perforations Due to Cancer:

(1) A woman of 48. Occlusion intestine for two weeks. Enormous distention abdomen, incessant vomiting, signs of obstruction in sigmoid, temperature 101.5. Operation March 22, 1922, under local anesthetic. Incision left iliac region. Annular neoplasm surrounded by omentum containing purulent material. Feces escaping from hole in sigmoid. Mass brought outside abdomen. Resection 15 days later, making artificial anus. Patient alive and well nine years later.

(2) A woman of 65. Occlusion intestine for two weeks. Mass felt by rectal touch. Temperature 103.1. Condition bad. Left iliac incision. Leaking mass lower sigmoid surrounded by abscess. Impossible to mobilize without destroying protecting adhesions. Drainage by gauze wick. Patient died in six days.

(3) A woman of 65, had had obstruction for eight days. Antecedent history indicative of neoplasm of pelvic colon. Rectal touch negative except little tension prerectal area. Temperature 101.5. Operation per incision left iliac region revealed mass in lower sigmoid. Dirty fluid in abdomen. Not able to deliver mass. Wicks placed about it. Cecostomy. Death in twelve days.

The existence of symptomatic abscess in connection with cancer of large intestine has been well known since 1850, when Bernutz published an article about them in Archives de Medicine. They may be stercoreal from the first, or take origin from an adenophlegmon. This makes no difference in treatment which is surgical, and should be carried out as soon as possible. The ideal procedure is to bring the entire mass through the operative incision and fix it on the outside of abdominal wall, draining it, followed by resection and artificial anus when infection has subsided and the patient is in better condition.

The first operation is always an emergency procedure. It ought to be done as rapidly as possible.

**Comment:** A colostomy well above the point of obstruction is of great service when there is pericancerous infection and fixation. Drainage of the infected area may be accomplished, if necessary, through a separate incision, the final operative procedure to be determined by the circumstances.

We do not believe that gauze wicks (les meches), alone, should be depended upon for drainage of an infected area, but when they are employed with rubber dams after the method of Coffey in his "quarantine" procedure, the results are very satisfactory.

LeRoy Long.

**Some Experiences with Oleothorax.** By Harry C. Ballon, St. Louis, Mo. *American Journal of Surgery*, April, 1932, Volume XVI, No. 1.

This article is of interest to the surgeon in that the method described "may be used to help stabilize the mediastinum preparatory to a thoracoplasty, or as an adjunct to an incomplete thoracoplasty."

It is related that Bernou, in July, 1921, injected oil into the pleural cavity of a patient suffering from pulmonary tuberculosis, and who had developed a bronchopleural fistula during the course of pneumothorax treatment. The purpose of the injection was to bring about compression and possibly disinfection. Bernou called the procedure "Oleothorax."

Ballon, working in the Chest Service, Department of Surgery, Barnes Hospital, has employed U.S.P. liquid paraffin, usually containing 5% gomenol. The oil is sterilized by heating. For better roentgenographic visualization, a few c.c. of lipiodol may be added.

Oleothorax is employed "as a means of obtaining compression which was no longer possible by other methods." The amount of oil used varies from a few c.c. to 100 c.c. or more, repeating as necessary, after determining the tolerance of the patient. The method "is contraindicated in the presence of a large bronchial fistula and during the acute stage of serofibrinous pleurisy."

While the antiseptic effect of oleothorax is not emphasized, the case of one patient is reported in which the injection of a large amount apparently prevented a secondary infection of a tuberculous empyema.

The technique is simple. The pleura is punctured under local anesthesia. If there is pneumothorax, some of the air is aspirated. It is not always necessary to aspirate pus, if present, but where there is a large amount some should be aspirated. A small injection is given at first to determine the tolerance of the patient. It is best to have fluoroscopic control. "High intrapleural pressure should be avoided."

**Comment:** In addition to the mechanical effect, it is interesting to speculate upon the inhibition of bacterial growth by liquid paraffin. In 1914, I accidentally opened the hip joint in the presence of a periarticular abscess following a bullet wound. I put two small rubber tubes into the joint cavity and injected liquid paraffin through them twice a day for two days, when the tubes were removed and the paraffin injected in the

tube tracts until they closed. The patient recovered with a good movable hip joint. Since then I have employed the method routinely after operations for suppurative arthritis, and it has served me well in other suppurative processes.

LeRoy Long.

1. **Ectopic Spleen.** By M. Oulie. 2. **The Morphologic Variations of Mediasto-Pulmonary Tumors.** By M. M. Grandeclaude, Nuytten and Emery.

Reported at the meeting of the Anatomical Society, Paris, January 7, 1932, and published in *La Presse Medicale*, January 30, 1932.

1. Oulie reported an operation in the case of a young woman for a syndrome indicating intestinal occlusion, accompanied by the presence of a voluminous and painful tumor above the pubes. The clinical diagnosis was ovarian cyst with torsion of the pedicle.

At operation it was found that the tumor was an ectopic spleen with torsion of the pedicle. It was thought that the symptoms of occlusion were reflex phenomena.

2. Grandeclaude, Nuytten and Hemery call attention to the morphologic variations of mediastopulmonary tumors, and point out that certain tumors classed as sarcomata by some authors are in reality of epithelial origin. These tumors are temporarily radio sensitive, but the regression is short, thus differing from other tumors of the mediastinum and lungs of ganglionic origin, these latter being much more radio sensitive.

In the discussion, M. Rene Huguenin remarks that there is unquestionably a variety of tumors of the lung which are epitheliomata, but which present the morphologic aspects of sarcomata. These tumors are very polymorphous, and he speaks of them as pseudo-sarcomata. He believes that they correspond clinically to a type which grows rapidly and spreads out in the free spaces of the mediastinum.

**NOTE:** There is great need on the part of both internists and surgeons for a better knowledge of intra-thoracic tumors. Not long ago I saw at autopsy a massive mediastinal malignancy involving the entire left lung in a man of 72. Up to a short time before death the clinical diagnosis had been pulmonary tuberculosis.

LeRoy Long.

**Traumatic Lesions of the Abdominal Viscera.** By J. William Hinton, New York. *American Journal of Surgery*, April, 1932, Volume XVI, No. 1.

The author divides the traumatic lesions of the abdomen into two groups:

1. Those resulting from penetrating objects, such as bullets and stab wounds. He believes that it is the consensus of surgical opinion that, usually, an immediate operation should be done when such wounds exist.

2. Traumas from blows, kicks, falls, violent abdominal contact with heavy objects. A list of 84 cases belonging to this group, admitted to the Fourth Surgical Division of Bellevue Hospital in eleven years, is analyzed. Of these, 64 were injuries of the solid organs and 20 of the hollow viscera.



The kidney was more frequently injured than any other solid organ, next the spleen and then the liver, but the last two were nearly the same.

The small intestine was more frequently injured than the bladder or large intestine.

There were 3 cases of retroperitoneal hemorrhage without kidney involvement.

Attention is called to the importance of determining whether abdominal symptoms may not be due to chest injuries—lungs, diaphragm.

The author takes a firm stand for conservative management in uncertain borderline cases after non-penetrating traumas of the abdomen. He states that Dr. Carl G. Burdick, Director of the Fourth Surgical Division, pointed out, seven years ago, the "inadvisability of submitting cases in which a questionable diagnosis existed to immediate laparotomy."

The author believes very strongly that injuries of the solid viscera usually do well if no operation is performed, and that they die often because of ill advised surgical operations in the presence of shock. In proof, 23 kidney injuries in this group recovered without operation, and there were much better results in liver and spleen injuries in those cases treated conservatively than in those where operations were done.

In conclusion, the author makes the definite statement that where one is reasonably certain that there has been injury of a hollow viscus an immediate laparotomy should be done. He insists, however, that when the symptoms are masked, or there are evidences of injury of liver, spleen, kidney or retroperitoneal area, an immediate operation should not be done.

Comment: This is a very important article. The conclusions of the author correspond exactly with our experience. We believe that adequate investigation will disclose whether there are injuries of the hollow viscera. If such injuries can be excluded, it is our distinct conviction that patients do far better without immediate operations, provided proper non-surgical treatment is given in a definite way.

LeRoy Long.

**Concerning Thrombophlebitis Caused by Effort (A Propos de la Thrombophlebitis par Effort).** By Paul Moure and Rene-Henri Martin. *La Presse Medicale*, March 9, 1932.

In *La Presse Medicale*, No 5, Page 84, 1932, there was a most remarkable article by Chifoliau and Folliasson about a young man who suddenly developed great swelling of one arm, with numbness, a little fever, moderate pain and complete loss of function, after unusual physical effort. The diagnosis was "Thrombophlebitis caused by effort." The authors of the article reported that a long thrombus was removed from the axillary vein, the operation being followed by complete recovery.

In the present article Moure and Martin, after referring to the report made by Chifoliau and Folliasson, and to a like former report by Lenormant and Mondor, (*La Presse Medicale*, 1931, No. 91, Page 1669) relate the particulars about a patient in whose case the symptoms and signs were exactly like those in the patient referred to above. Influenced by the report of Chifoliau and Folliasson, a diagnosis of thrombophlebitis from effort

was made, but operation did not confirm the diagnosis. The following is a synopsis of the case:

An electrician 21 years of age entered hospital because of numbness and swelling of entire right arm. Three weeks before, he was partially overcome by gas while in bed, and spent a restless night with disordered movements. The next morning the arm was completely numb and swollen.

On admission, arm was oedematous throughout, very white, numb, completely useless. No axillary adenopathy, no pitting on pressure. Temperature from 99.5 F. to 100.4 F.

Radial artery palpable, but brachial not. Pulse 80.

Diagnosis: Thrombophlebitis from effort.

At first, medical treatment—complete rest, elevation arm, leeches, compression. Swelling of forearm disappeared, but that in upper arm constant, particularly on inner side over course of principal vessels.

Believing that there was a thrombus in the axillary vein, exploration through long incision. Both artery and vein perfectly normal. A small tributary vein sectioned near its mouth bled normally.

There was an old, yellowish, ecchymotic infiltration into cellular tissue to inner side of biceps and into the sheath of that muscle. The biceps and coracobrachialis contained yellowish fluid. Closure without drainage.

Gradually, the swelling disappeared and function returned. The patient resumed his occupation two months later.

The final conclusion of the authors is that the swelling and oedema of the arm were due to rupture of lymphatic vessels during the efforts of disordered movements. In that case the swelling is analogous to that which sometimes takes place after operative removal of glands bearing fascia from the axilla.

LeRoy Long.

**Anaerobic Streptococci in the Vagina of Normal Clinic Patients.** By S. C. Soule, M.D., and T. K. Brown, B. S., M. S., M.D., St Louis, Mo. *American Journal of Obstetrics and Gynecology*, April 1932, Volume XXIII.

The authors reported a complete bacteriological investigation taken from the vagina of 207 normal pregnant women. They found anaerobic growth in 60 per cent of all patients and anaerobic streptococci were isolated in 40 per cent of all cases. The anaerobic streptococci were definitely more frequent in primiparae than in multiparae.

They feel that it has been definitely shown in Barnes Hospital that anaerobic streptococci can and do give rise to all grades of puerperal sepsis. "The isolation of these organisms in 40 per cent of normal pregnant women confirms the conclusions of Rosowsky that 'these bacteria live saprophytically in the vagina, but under certain conditions following abortion or delivery they can cause severe sickness.'"

The authors have found that there is a definite improvement in their morbidity statistics following the prophylactic use of vaginal germicidal solutions during labor. (Either mercurochrome,

iodine and glycerin or glycerin and acriflavine were used).

They conclude from their experience that puerperal infections due to anaerobic streptococci are frequent and often serious.

Comment: This is a valuable piece of work, helping to prove that anaerobic streptococci live saprophytically in the vagina, and are the causative organisms in many cases of puerperal sepsis and especially in parametritis following abortion.

—Wendell Long.

**The Bacteriology and Pathology of Chronic Cervicitis.** By Harry Oliver Maryan, B.S., M.D., Chicago, Ill., *American Journal of Obstetrics and Gynecology*, April, 1932, Volume XXIII.

The author has presented an excellent review of the literature on the subject and has made a comprehensive bacteriological investigation of cervical tissue enucleated by the Sturmdorf technic. This has been closely correlated with the pathology of the tissue so obtained.

Their summary of findings follows:

1. The organisms isolated are the enterococcus.
2. Because of the methods employed we feel that the organisms isolated are from the depths of the compound racemose glands.
3. These organisms are highly heat resistant, of relative low virulence and tendency to live long.

4. In 80.4 per cent of cases the cultures were positive and in 19.6 per cent they were negative.

5. Paraffined sections stained with hemotoxylin, and eosin, and Van Gieson methods were done routinely for general study.

6. The bacterial stains used were: (1) Gram-Weigert, (2) Levaditi (mainly for spirochetes), (3) Wolbach-Giemsa, and (4) Brown and Brenn.

7. No bacteria in the tissues were demonstrated in our series of 49 cases of chronic cervicitis.

8. Microscopic sections reveal mild, moderate, recurrent, and intense cellular infiltration and glandular proliferation of the endocervix and the deeper structures.

9. Glandular and follicular erosions were also encountered in many of the sections.

10. Chronic cervicitis is preferable to the term chronic endocervicitis, as the deeper structures are generally involved.

Comment: This also is a valuable study which helps to form the basis for the proper diagnosis and care of cervical lesions.

—Wendell Long.

**A Study of the Menstrual Histories of 2,282 University Women.** By Ruth E. Boynton, M.S., M.D., Minneapolis, Minn. *American Journal of Obstetrics and Gynecology*, April, 1932, Volume XXIII.

This is an interesting article largely from the standpoint of statistics. It was found that the incidence of dysmenorrhea in 2,282 university women was 20.38%. In the small group of student nurses the percentage of dysmenorrhea was 6.98. The amount of physical exercise had no significant relation to dysmenorrhea.

Posture showed no significant relation to dysmenorrhea, although the percentage of dysmenorrhea in the poorer posture groups was lower than those of better posture.

The percentage of dysmenorrhea occurring in a group of students classified as "high strung" was lower than in a control group not so classified.

The systolic blood pressure, the mean height-weight percentage, and the mean hemoglobin percentage, were significantly lower for those having dysmenorrhea than for the group who had no pain. The mean vital capacity percentage was slightly higher for the dysmenorrhea group. That is, the percentage of cases having dysmenorrhea was greatest in the lower blood pressure group, the lower height-weight percentage group and the lower hemoglobin group.

—Wendell Long.

**Tuberculous Endometritis. Report of Cases.** By Abraham Heinrich, M. D., Brooklyn, N. Y. *American Journal of Obstetrics and Gynecology*, April, 1932, Volume XXIII.

This author presents two cases of tuberculous salpingitis associated with positive microscopic diagnosis of tuberculosis in the fundus. He quotes Norris, who holds the view that the spread of tuberculosis from the tubes to the endometrium is by direct continuity through the opening of the tubes into the uterus. He feels that a complete hysterectomy is advisable as soon as the diagnosis of tuberculous salpingitis is made, because of the early uterine involvement.

Comment: As far as therapy is concerned, tuberculous disease of the tubes and uterus offers an extremely difficult situation in each individual case. It is my feeling that, if operated upon, a thorough procedure should be done, including the removal of both tubes and uterus. However, in certain cases the improvement of general resistance and general tuberculosis therapy is probably to be advised over any operative interference.

—Wendell Long.

**Menorrhagia Due to Hypothyroidism.** By W. C. Waters, M.D., and George A. Williams, M.D., Atlanta, Ga. *American Journal of Obstetrics and Gynecology*, April, 1932, Volume XXIII.

These authors have considered the question of menorrhagia due to hypothyroidism, giving a brief resume of the literature on the subject, outlining the history in six cases, and making appropriate comment upon the diagnosis and treatment of such condition.

The cases included various ages and various causes for the hypothyroidism. For example, one was an 18 year old girl who had had radiation years before because of profuse menstruation and presented herself to the authors with a menstrual flow constant and excessive for three months. Another was a woman of 55 who had a history of painful swelling at the base of the neck at 12 which had to be lanced and was probably an acute thyroiditis. Another was a woman of 24 who was undernourished and anemic with a minus 22 basal metabolic rate and profuse menstrual periods of seven days, every 21 to 25 days. The other three cases were in the fourth decade, and mention is made in two of them of slight obesity.



The basal metabolic rate in these cases is not far below normal.

In the six cases reported, complete clinical relief was obtained by administration of thyroid extract. The authors make the statement that, "Excessive bleeding is the menstrual disturbance most frequently associated with hypothyroidism, amenorrhea rarely, if ever, occurring when the thyroid gland alone is deficient in function." He feels that patients of any age, whose menorrhagia cannot be attributed to pelvic pathology should have a therapeutic test with thyroid gland administration before more radical measures are instituted. He points out that hypothyroidism may occur in the presence of an apparently normal basal metabolism, and feels that the response of the symptoms, including menorrhagia, to substitution therapy is the most reliable evidence of deficiency of thyroid gland function.

Comment: These authors have made some rather sweeping statements but there is no question but that many cases of menorrhagia occur in people with hypothyroidism and that administration of thyroid reduces the menorrhagia in those instances. It is also true that many women in the fourth decade have essentially normal basal metabolic rates associated with obesity of varying degrees, and these patients will also have considerable reduction in menorrhagia from weight loss and thyroid therapy. Despite the fact that these authors are moderately over enthusiastic, there is much value in this etiologic factor for many cases of menorrhagia, and consequently much good can be done in these situations with the administration of thyroid.

—Wendell Long.

#### "WHEN, AS AND IF"

The bottle-fed baby exhibits symptoms indicating partial vitamin B deficiency—described by Hoobler as (1) anorexia (2) loss of weight (3) spasticity of arms and legs (4) restlessness, fretfulness (5) pallor, low hemoglobin, etc.

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Not all infants require vitamin B supplements, but when the infant needs additional vitamin B, this product supplies it together with carbohydrate. In other cases, the carbohydrate of choice is Dextri-Maltose No. 1, 2 or 3.

#### ANGINAL PAIN AS A RESULT OF DIGITALIS ADMINISTRATION

G. K. Fenn and N. C. Gilbert, Chicago (Journal A. M. A., Jan. 9, 1932), became interested in anginal pain as a result of digitalis administration, by reason of the behavior of a patient who came under their observation about twelve years ago.

While this patient was on digitalis treatment, attacks of angina pectoris suddenly developed. When the digitalis was withdrawn, the attacks ceased and the procedure was repeated several times with always the same result. The patient had a previous history of angina pectoris, and at this time the belief of several authors was followed in assuming that anginal attacks often stop as decompensation comes on and reappears as compensation is reestablished. In the light of further experience, the authors suspect that digitalis may be responsible for the appearance of angina in many cases in which that drug is used to restore compensation. They report the results of experiments that they performed on dogs which would seem to justify their contention that digitalis is capable of producing anginal pain. That constriction does not occur in every case does not appear to them to be surprising. The action of digitalis is dependent on a great number of variables and the regulation of the coronary flow is under a very complicated mechanism, and every automatic adjustment must be brought to bear to prevent the occurrence of a condition that is of such great physiologic disadvantage to the organism. That it does occur in some cases seems to the authors to be beyond question, but they have discovered no way to forecast its occurrence in any given case.

#### PRACTICAL POINTS IN OPHTHALMIC PRACTICE: STUDY OF RECENT FOOD RESEARCHES

Laura A. Lane, Minneapolis (Journal A. M. A., Feb. 27, 1932), sets forth evidence showing that one of the most constant signs of food deficiency is the pigmentation of the conjunctiva and the reduction of the light sense. The retina stores vitamin A, and an avitaminosis causes an increase of lipoids in the rods of the retina and decreases the visual purple. Lack of vitamin A has been responsible for epidemics of hemeralopia, xerophthalmia and keratomalacia. Vitamin A is largely stored in the liver and is much depleted in chronic illness; it appears to be concerned largely with preventing infection. Vitamin B is necessary to good nutrition. Lack of B<sup>1</sup> causes nervousness and irritability, and patients complain of the eyes tiring easily. Vitamin B concentrate added to the diet of those suffering from uveitis of unknown etiology is beneficial. A lack of vitamin C, combined with a calcium deficiency, may be responsible for repeated vitreous hemorrhage of unknown etiology. The mineral salts are potent substances concerned in regulating the physiologic processes of the body. Calcium is more frequently deficient in American diets than any of the other mineral elements. Calcium deficiency occurs in vernal conjunctivitis. The complexity of the protein constituents of foods is shown. Proteins of poor quality can cause ophthalmia. The consumption of carbohydrates is often two or three times the amount required for good nutrition. Excessive use of carbohydrates has been known to cause inflammatory diseases of the eye. Excessive fat diets deficient in mineral elements and vitamins cause hyperplasia of the tissues. The problem of food intake concerns itself with sufficient mineral elements and protective substances to maintain proper equilibrium of the body fluids and tissues.

### IODOBISMITOL: SOLUBLE BISMUTH PRODUCT FOR USE IN TREATMENT OF SYPHILIS

P. J. Hanzlik, H. G. Mehrtens, Charles Gurchot and C. C. Johnson, with the assistance of Jean Spaulding and D. C. Marshall, San Francisco (Journal A. M. A., Feb. 13, 1932), submit a preliminary report on the properties and actions of iodobismitol, a soluble and injectable preparation of bismuth, containing the bismuth as anion. Theoretical considerations for using bismuth in this form are given. Iodobismitol consists of sodium iodobismuthite (6 per cent) dissolved in ethylene glycol containing sodium iodide (12 per cent). It is injected intramuscularly in doses of 2 cc. containing 0.12 Gm. of iodobismuthite (equal to 0.0236 Gm. of bismuth), a proposed course of treatment consisting of ten injections in about three weeks, to be followed by a rest period and additional courses as further experience may indicate. Used in doses within the therapeutic range, iodobismitol was found to be generally well tolerated locally and systematically, to be fairly rapidly absorbed and excreted, to possess anti-syphilitic action, to penetrate the brain of animals, and to appear in the cerebrospinal fluid of human subjects. Accordingly, iodobismitol possesses certain advantages over the bismuth products in current use which contain the bismuth as cation and do not dependably penetrate the brain. The authors believe that iodobismitol appears worthy of clinical trial in the treatment of syphilis, since it offers the possibility of early treatment, and of prevention, of neurosyphilis.

### NARCOLEPSY: RESULTS OF TREATMENT WITH EPHEDRINE SULPHATE

John B. Doyle and Luman E. Daniels, Rochester, Minn. (Journal A. M. A., Feb. 13, 1932), report a survey that they made of information obtained concerning sixty patients who were given a diagnosis of narcolepsy in the clinic and who had not been treated with ephedrine. The duration of the disorder ranged from one to forty years. No patient had recovered completely. Thirty patients wrote that they had improved. In fourteen instances, however, the improvement was very slight. Twenty-five patients reported that they were the same, and eight that they were worse. Four patients had died. Fifty patients were treated with ephedrine, including those treated by others as well as those treated by the authors. The treatment was a total failure in two instances. Two patients, who at first were improved, no longer appear to receive any effect from the drug. Eight patients have been moderately improved symptomatically. Seventeen patients have made marked symptomatic improvement, and twenty have been completely relieved symptomatically. In the two groups mentioned in the preceding sentence, symptomatic relief continues as follows: in four patients after

nine months, in two after eight months, in two patients after five months, in three patients after four months, in six after three months, and in four after two months.

### VALUE OF LIVER EXTRACT AND IRON IN ANEMIA OF YOUNG INFANTS

Siegfried Maurer, Joseph Greengard and Cessa Kluver, Chicago (Journal A. M. A., March 26, 1932), found it possible to control the anemias of early infancy by administration of liver extract and iron which contains traces of copper. The administration of iron with traces of copper to anemic infants failed to bring about an improvement in blood in about 50 per cent of cases, and liver alone failed in but 37 per cent. The patients in the latter group made significant improvement in blood after iron was added. Also of those infants of the iron series who had failed to make improvements in blood on the iron and copper mixture, those who received liver extract in addition made good gains. Of the infants who showed improvement on either iron or liver extract or on the two together, sometimes before, but always by the time the improvement in blood was apparent, the general condition definitely changed. Appetite improved, the skin became rosier, and normal turgor appeared. In addition, the infants showed definite psychic changes. Irritability disappeared, activity and alertness increased, and rapid gain in weight occurred. In every instance, liver extract was taken well and gastro-intestinal disturbances, such as vomiting or loose stools, were never observed.

### THREE FATAL CASES OF BACILLUS PYOCYANEUS INFECTION

B. S. Kline and A. S. Maschke, Cleveland (Journal A. M. A., Feb. 13, 1932), report three fatal cases of *Bacillus pyocyaneus* infection that presented characteristic features, including gangrenous and less severe lesions of the skin, most advanced in the anal, rectal or genital areas; general intoxication with profound prostration and, at autopsy, hemorrhagic and necrotic lesions in the skin and viscera, associated with massive local bacterial colonization. One of these cases, which presented agranulocytosis, terminated eighteen days after the onset of symptoms in a previously healthy child. *B. pyocyaneus* infection, although not of common occurrence, is perhaps less rare than is generally supposed. Clinically it may be confused with a number of skin diseases, including pellagra and lupus erythematosus disseminatus. It must be differentiated from aleukemic leukemia, the purpuras and other diseases. Some progress toward specific therapy has been reported, and it is possible that further studies will reveal methods of preparing bactericidal and antitoxic serums.



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Brown, Roderick F. ....	Altus
Collier, E. K. ....	Tipton
Crow, Emory S. ....	Olustee
Fox, Raymond H. ....	Altus
Hix, Joseph B. ....	Altus
Humphrey, J. A. ....	Martha
Mabry, E. W. ....	Altus
McConnell, L. H. ....	Altus
Reid, John Robt. ....	Altus
Rudell, Wm. P. ....	Altus
Spears, Claud G. ....	Altus
Taylor, Robt. Z. ....	Blair

## JEFFERSON

Browning, W. M. ....	Waurika
Burgess, Wm. C. ....	Ringling
Collins, D. B. ....	Waurika
Derr, J. I. ....	Waurika
Edwards, F. M. ....	Ringling
McPherson, J. M. ....	Terral
Maupin, C. M. ....	Waurika
Mingus, F. M. ....	Ringling
Wade, L. L. ....	Ryan
Watson, J. W. ....	Ryan

## JOHNSON

Clark, Guy ....	Milburn
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## KAY

Armstrong, W. O. Continental Oil Co.,	Ponca City
Arrendell, C. W. ....	Ponca City
Barker, J. C. ....	Kaw City
Beatty, J. H. ....	Tonkawa
Becker, L. H. ....	Blackwell
Berry, G. L. ....	Blackwell
Browne, H. S. ....	Ponca City
Clift, Merl ....	Blackwell
Denham, T. W. ....	Three Sands
Driver, Geo. ....	Ponca City
Gibson, R. B. ....	Ponca City
Gordon, D. M. ....	Ponca City
Gowey, H. O. ....	Newkirk
Haven, A. R. ....	Blackwell
Hawkins, J. C. ....	Blackwell
Hazen, A. L. ....	Newkirk
Hudson, J. O. ....	Braman
Jones, J. A. ....	Tonkawa
Leslie, W. M. ....	Blackwell
Lipscomb, Pat ....	Ponca City
Mathews, Dewey ....	Tonkawa
McClurkin, W. M. ....	Ponca City
McElroy, Thomas ....	Ponca City
Melinder, D. G. ....	Newkirk
Miller, D. W. ....	Blackwell
Moore, G. C. ....	Ponca City
Neal, L. G. ....	Ponca City
Neimann, G. H. ....	Ponca City
Northcutt, C. E. ....	Ponca City
Nuckols, A. S. ....	Ponca City
Risser, A. S. ....	Blackwell
Vance, L. C. ....	Ponca City

Wagner, J. C. ....	Ponca City
Waggoner, E. E. ....	Tonkawa
Walker, I. D. ....	Tonkawa
Wall, J. C. ....	Tonkawa
Werner, J. W. ....	Newkirk
White, M. S. ....	Blackwell
Winters, J. S. ....	Ponca City

## KINGFISHER

Cavett, E. R. ....	Loyal
Dixon, A. ....	Hennessey
Gose, C. O. ....	Hennessey
Hodgson, C. M. ....	Kingfisher
Rector, Newton ....	Hennessey
Scott, Frank ....	Kingfisher
Townsend, B. I. ....	Hennessey

## KIOWA

Adams, J. L. ....	Hobart
Bonham, J. M. ....	Hobart
Bryce, J. R. ....	Snyder
Gray, Melvin ....	Mt. View
Hathaway, A. H. ....	Mt. View
Land, J. A. ....	Hobart
Lloyd, H. C. ....	Hobart
Miles, E. P. ....	Hobart
Moore, J. H. ....	Hobart
Preston, C. R. ....	Mt. Patk
Ritter, J. M. ....	Roosevelt
Snow, C. F. ....	Hobart
Walker, F. E. ....	Lone Wolf
Watkins, B. H. ....	Hobart
Winter, J. D. ....	Hobart

## LATIMER

Evins, E. L. ....	Wilburton
Hamilton, E. B. ....	Wilburton
Harris, J. M. ....	Wilburton
Henry, T. L. ....	Wilburton
Rich, R. L. ....	Red Oak

## LeFLORE

Baker, F. P. ....	Talihina
Bevil, S. D. ....	Poteau
Booth, G. P. ....	LeFlore
Collins, E. L. ....	Panama
Dean, S. C. ....	Howe
Duff, W. M. ....	Braden
Fair, E. N. ....	Heavener
Hardy, H. ....	Poteau
Head, W. M. ....	Talihina
Hunt, W. J. ....	Poteau
Minor, R. M. ....	Williams
Shippey, W. L. ....	Wister
Woodson, E. M. ....	Poteau

## LINCOLN

Adams, J. W. ....	Chandler
Baird, W. D., Jr. ....	Stroud
Baird, W. D. ....	Stroud
Brown, F. C. ....	Sparks
Davis, W. H. ....	Chandler
Erwin, Para ....	Wellston
Hancock, J. M. ....	Chandler
Hannah, R. H. ....	Prague
Hurlburt, E. F. ....	Meeker
Iles, H. C. ....	Prague
Jenkins, H. B. ....	Tryon
Marshall, A. M. ....	Chandler
Nickell, U. E. ....	Davenport
Norwood, F. H. ....	Prague
Robertson, C. W. ....	Chandler
Rollins, J. S. ....	Prague
Sosbee, J. W. ....	Stroud



## LOGAN

Allen, Robt. ....	Guthrie
Barker, Chas. B. ....	Guthrie
Barker, E. O. ....	Guthrie
Barker, Pauline ....	Guthrie
Branson, C. S. ....	Coyle
Childers, A. G. T. ....	Mulhall
Gardner, P. B. ....	Marshall
Goodrich, E. E. ....	Crescent
Gray, Dan ....	Guthrie
Hahn, L. A. ....	Guthrie
Hill, C. B. ....	Guthrie
Larkin, H. W. ....	Minco
LeHew, Jr., J. Leslie ....	Guthrie
Melvin, J. L. ....	Guthrie
Miller, W. C. ....	Guthrie
Petty, C. S. ....	Guthrie
Ringrose, R. F. ....	Guthrie
Ritzhaupt, L. H. ....	Guthrie
Souter, J. E. ....	Guthrie
Trigg, F. E. ....	Guthrie
West, A. A. ....	Guthrie

## MAJOR

Anderson, J. V. ....	Fairview
Specht, Elsie L. ....	Fairview

## MARSHALL

Haynie, W. D. ....	Kingston
Holland, J. L. ....	Madill
Logan, J. H. ....	Lebanon
Robinson, P. F. ....	Madill
Veazy, J. H. ....	Madill

## MAYES

Adams, S. ....	Cherry Creek, So. Dakota
Bryant, W. C. ....	Choteau
Puckett, Carl ....	22 W. 6th St., Oklahoma City

## McCLAIN

Barger, G. S. ....	Purcell
Dawson, O. O. ....	Wayne
Kolb, I. N. ....	Blanchard
McCurdy, W. C. ....	Purcell
Royster, Ralph I. ....	Purcell
Slover, B. W. ....	Blanchard

## McCURTAIN

Barker, N. L. ....	Broken Bow
Huckabay, C. R. ....	Idabel
Moreland, J. T. ....	Idabel
Moreland, W. M. ....	Idabel
Sherrill, R. H. ....	Broken Bow
Thompson, J. M. ....	Walters
Williams, R. D. ....	Idabel

## McINTOSH

Lee, N. P. ....	Checotah
Little, D. E. ....	Eufaula
Smith, F. L. ....	Eufaula
Tolleson, W. A. ....	Eufaula
West, G. W. ....	Eufaula

## MURRAY

Annadown, P. V. ....	Sulphur
Bailey, H. C. ....	Sulphur
Brown, A. P. ....	Davis
Brown, Byron B. ....	Davis
Brown, I. N. ....	Fletcher
Keller, J. R. ....	Sulphur
Luster, J. C. ....	Davis
Slover, G. W. ....	Sulphur
Sprouse, O. W. ....	Sulphur
Sullivan, A. H. ....	Sulphur

\*Deceased

## MUSKOGEE

Ballantine, H. T. ....	Surety Building
Blakemore, J. L. ....	Barnes Building
Berry, W. D. ....	Barnes Building
Bruton, L. D. ....	Commercial National Building
Burns, B. H. ....	Warner
Campbell, J. F. ....	Barnes Building
Coachman, E. H. ....	2803 Columbus
DeGroot, C. E. ....	Manhattan Building
Donnell, R. N. ....	626 North "E" Street
Dorwart, F. G. ....	Barnes Building
Earnest, A. N., U. S. Veterans Hosp., Oteen, N. C.	
Everly, A. W. ....	Equity Building
Ewing, F. W. ....	Surety Building
Fite, E. H. ....	Barnes Building
Fite, W. P. ....	Barnes Building
Fryer, S. J. ....	Surety Building
Fullenwider, C. M. ....	Barnes Building
Heitzman, C. W. ....	Barnes Building
Hamm, S. G. ....	Haskell
*Harris, A. W. ....	Surety Building
Holcombe, R. N. ....	Surety Building
Joblin, W. R. ....	Porter
Keith, E. S. ....	Central High School Building
King, F. S. ....	Surety Building
Klass, O. C. ....	Surety Building
McAlester, L. S. ....	Barnes Building
Mitchell, S. E. ....	Veterans Hospital, Muskogee
Mobley, A. L., Fitzsimmons Hosp., Denver, Colo.	
Muller, J. A. ....	Veterans Hospital Muskogee
Murphy, C. P., U. S. Veterans Hosp., Hines, Ill.	
Neely, S. D. ....	Commercial National Building
Nichols, J. T. ....	Equity Building
Oldham, Jr., I. B. ....	426 No. 6th Street
Oldham, Sr., I. B. ....	426 No. 6th Street
Rafter, J. G. ....	Manhattan Building
Reynolds, John ....	First National Building
Rice, C. V. ....	Barnes Building
Scott, H. A. ....	Surety Building
Scott, Hugh ....	Hines, Illinois
Shakelford, T. T. ....	Haskell
*Stocks, A. L. ....	2010 Boston
Thomas, L. M. ....	Webbers Falls
Thompson, C. A. ....	Manhattan Building
Thompson, M. K. ....	Surety Building
Vittum, J. S. ....	Barnes Building
Walton, F. L. ....	302 North 14th Street
Warterfield, F. E. ....	Commercial National Bldg.
White, J. H. ....	Surety Building
Wilkiemeyer, F. J. ....	2128 West Broadway
White, C. E. ....	Surety Building
Wolfe, I. C. ....	436 North 6th Street

## NOBLE

Cavitt, R. A. ....	Morrison
Evans, A. M. ....	Perry
Francis, J. W. ....	Perry
Owen, B. A. ....	Perry

## NOWATA

Dolson, F. R. ....	Nowata
Lawson, D. M. ....	Nowata
Prentiss, H. M. ....	Nowata
Prentiss, M. B. ....	Nowata
Roberts, S. P. ....	Nowata
Scott, M. B. ....	Delaware
Sudderth, J. P. ....	Nowata
Waters, Geo. A. ....	Lenapah

## OKFUSKEE

Adams, Allen C. ....	Weleetka
Bloss, C. M. ....	Okemah
Bombarger, C. C. ....	Paden
Brice, M. O. ....	Okemah
Cochran, C. M. ....	Okemah

Dovell, John C. ....	Paden
Jenkins, W. P. ....	Cromwell
Kennedy, J. A. ....	Okemah
Keys, Robert .....	Okemah
Lucas, A. C. ....	Castle
Melton, A. S. ....	Okemah
Moyse, J. L. ....	Castle
Pemberton, J. M. ....	2400 So. Harvey, Okla. City
Preston, J. R. ....	Weleetka
Preston, T. R. ....	Weleetka
Spickard, L. J. ....	Okemah

## OKLAHOMA

Adams, Robert H. ....	210 West Commerce
Alford, J. M. ....	Medical Arts Building
Akin, R. H. ....	Medical Arts Building
Allen, E. P. ....	Osler Building
Andrews, Leila E. ....	Osler Building
Arrington, C. T. ....	805 North Walnut
Bailey, F. M. ....	1219 West 21st
Bailey, W. H. ....	300 W. 12th
Balyeat, R. M. ....	1200 N. Walker
Barker, Chas. E. ....	Osler Building
Bates, C. E. ....	Key Building
Batchelor, John J. ....	Medical Arts Building
Berry, C. N. ....	Medical Arts Building
Beyer, M. R. ....	2006 W. 39th
Binkley, J. G. ....	Medical Arts Building
Birge, Jack P. ....	St. Anthony Hospital
Blachley, C. D. ....	Medical Arts Building
Blachley, Lucille S. ....	408 Medical Arts Building
Blesh, A. L. ....	300 W. 12th
Boggs, Nathan ....	Perrine Building
Bolend, F. J. ....	1200 N. Walker
Bolend, Rex ....	Medical Arts Building
Bondurant, C. P. ....	Medical Arts Building
Bonham, Wm. L. ....	Medical Arts Building
Borecky, Geo. L. ....	Medical Arts Building
Bradley, H. C. ....	Perrine Building
Branham, D. W. ....	403 W. 51st, Philadelphia, Pa.
Brewer, A. M. ....	Perrine Building
Brittain, Fannie Lou ....	Medical Arts Building
Brown, Gerster Wm. ....	Perrine Building
Brundage, C. L. ....	Medical Arts Building
Buchanan, Thos. A. ....	American Nat'l Bldg.
Burton, John F. ....	Osler Building
Butler, H. W. ....	Osler Building
Canada, J. C. ....	1037 S. W. 27th
Cailey, Leo ....	Medical Arts Building
Cates, Albert ....	Medical Arts Building
Caviness, J. J. ....	Osler Building
Charney, L. H. ....	132 W. 4th
Chase, A. B. ....	Colcord Building
Christian, Paul C. ....	518 Key Building
Clark, Fred H. ....	

## U. S. Veterans Hospital, Aspinwall, Pa.

Cloudman, H. H. ....	Medical Arts Building
Clymer, Cyril E. ....	Medical Arts Building
Coley, A. J. ....	Medical Arts Building
Collins, H. D. ....	Medical Arts Building
Cooper, F. M. ....	Medical Arts Building
Crawford, Paul H. ....	441 N. W. 12th
Cunningham, S. R. ....	Medical Arts Building
Curtis, S. J. ....	215½ S. W. 25th
Daily, H. J. ....	Medical Arts Building
Davis, C. E. ....	Medical Arts Building
Davis, E. P. ....	First Nat'l Bank Building
DeMand, F. A. ....	Medical Arts Building
Dersch, Walter H. ....	Medical Arts Building
Dickson, Green K. ....	1200 N. Walker
Dill, Francis E. ....	Medical Arts Building
Dougherty, Virgil F. ....	Gorel, Abyssinia, Africa
Dowdy, T. W. ....	Medical Arts Building
Duncan, D. G. ....	Medical Arts Building
Early, R. O. ....	Medical Arts Building
Eastland, W. E. ....	Medical Arts Building

Eley, N. Price ....	Medical Arts Building
Emenhiser, Lee K. ....	1200 N. Walker
Epley, C. O. ....	717 North Robinson
Erwin, F. B. ....	Medical Arts Building
Eskridge, Jr., J. B. ....	Osler Building
Fagin, Herman ....	Medical Arts Building
Faris, Brunel D. ....	First Nat'l Building
Ferguson, E. Gordon ....	Medical Arts Building
Ferguson, E. S. ....	Medical Arts Building
Field, C. H. ....	Medical Arts Building
Fishman, C. J. ....	132 W. 4th
Fitz, R. J. ....	Taming, Fu Hoppe, No. China
Fletcher, J. H. ....	Edmond
Foerster, H. A. ....	103½ W. Main, Ada
Fowler, W. A. ....	23½ N. Block St., Fayetteville, Ark.
Fox, Fred T. ....	501 W. 12th
Frrierson, S. E. ....	Medical Arts Building
Fuller, W. B. ....	1312½ S. Agnew
Fulton, Geo. ....	American Nat'l Building
Garrison, Geo. H. ....	Osler Building
Gee, O. J. ....	Medical Arts Building
Glomset, John L. ....	Plaza Court
Goldfain, E. ....	717 N. Robinson
Goodwin, R. Q. ....	Medical Arts Building
Graening, P. K. ....	First National Building
Gray, Floyd ....	Osler Building
Gray, J. Worth ....	225 Liberty Nat'l Building
Gregory, M. S. ....	Medical Arts Building
Guthrie, A. L. ....	1200 N. Walker
Hall, C. H. ....	Medical Arts Building
Hammonds, O. O. ....	Medical Arts Building
Haney, A. H. ....	Medical Arts Building
Harbison, Frank ....	Terminal Building
Harbison, J. E. ....	Terminal Building
Harris, H. W. ....	Medical Arts Building
Haskett, Paul E. ....	Hales Building
Hatchett, J. A. ....	Medical Arts Building
Hathaway, E. P. ....	300 W. 12th
Hayes, B. A. ....	Osler Building
Hazel, Onis G. ....	University Hospital
Heatley, J. E. ....	Medical Arts Building
Hetherington, A. J. ....	2014 Gatewood Ave.
Hinchee, G. W. ....	1415 W. 34th
Holliday, J. R. ....	1200 N. Walker
Hood, F. Redding ....	Osler Building
Hooper, W. F. ....	1804 Linwood Blvd.
Howard, R. M. ....	1200 N. Walker
Howell, C. A. ....	Perrine Building
Hicks, Fred B. ....	Medical Arts Building
Hirshfield, A. C. ....	Medical Arts Building
Hunter, Geo. ....	Wewoka
Hyroop, Gilbert L. ....	Medical Arts Building
Jacobs, M. F. ....	Medical Arts Building
Janco, Leon ....	10 West Park
Jeter, Hugh G. ....	Osler Building
Jolly, W. J. ....	614 W. 14th
Jones, Hugh C. ....	Medical Arts Building
Keller, W. F. ....	Medical Arts Building
Kelly, John F. ....	Medical Arts Building
Kelso, J. W. ....	Medical Arts Building
Keltz, Bert F. ....	Medical Arts Building
Kernodle, S. E. ....	119 W. 5th
Kimball, Geo. H. ....	Colcord Building
Knowles, Charles E. ....	Medical Arts Building
Kuchar, V. ....	Hightower Building
Kuhn, John F. ....	Medical Arts Building
Lain, E. S. ....	Medical Arts Building
LaMotte, G. A. ....	Colcord Building
Lane, L. C. ....	First National Building
Langston, Wann ....	Medical Arts Building
Lawson, N. E. ....	Medical Arts Building
Lee, C. E. ....	Medical Arts Building
Lehmer, Elizabeth E. ....	132 West 4th
Lewis, A. R. ....	Hightower Building
Lewis, Edwin ....	Woodward



Lingenfelter, F. M. .... Osler Building  
 Little, John R. .... 501 West 12th  
 Long, LeRoy ..... Medical Arts Building  
 Long, LeRoy Downing ..... Medical Arts Building  
 Long, Ross David ..... 945 West 13th  
 Long, Wendell ..... Medical Arts Building  
 Love, Robert S. .... Medical Arts Building  
 Lowry, Dick ..... Osler Building  
 Lowry, Tom ..... Osler Building  
 Loy, C. F. .... Perrine Building  
 Lyon, J. I. .... Edmond  
 Mabry, E. D. .... Equity Building  
 MacCabe, R. S. .... Medical Arts Building  
 MacDonald, J. C. .... 300 W. 12th  
 Margo, Elias ..... 717 N. Robinson  
 Martin, Howard ..... Perrine Building  
 Martin, Joseph T. .... 1200 N. Walker  
 Mathews, G. F. .... State Capitol Building  
 McBride, E. D. .... 717 N. Robinson  
 McGee, J. P. .... Osler Building  
 McHenry, D. D. .... Medical Arts Building  
 McHenry, L. C. .... Medical Arts Building  
 McLaughlin, J. R. .... Medical Arts Building  
 McNeill Philip M. .... Medical Arts Building  
 Miles, W. H. .... City Hall Building  
 Miller, N. L. .... Medical Arts Building  
 Mills, R. C. .... City Hall Building  
 Moffitt, John A. .... University Hospital  
 Moor, H. D. .... 801 E. 13th  
 Moore, C. D. .... Perrine Building  
 Moore, Ellis ..... Medical Arts Building  
 Moorman, Floyd ..... 1200 N. Walker  
 Moorman, L. J. .... Osler Building  
 Morgan, C. A. .... First Nat'l Building  
 Morledge, Walker ..... 105 Osler Building  
 Moth, M. V. .... American Nat'l Building  
 Mraz, J. Z. .... 300 W. 12th  
 Musick, E. R. .... Medical Arts Building  
 Musick, V. H. .... 217½ W. 25th  
 Murdock, R. L. .... Medical Arts Building  
 Myers, Ralph ..... Osler Building  
 Nagle, Patrick S. .... Medical Arts Building  
 Newton, L. A. .... Medical Arts Building  
 Nicholson, B. H. .... 300 W. 12th  
 Noell, Robert L. .... 900 W. Main  
 Nunnery, E. E. .... 2531½ S. Robinson  
 O'Donoghue, D. H. .... Medical Arts Building  
 Padberg, J. W. .... 1800 W. 16th  
 Parks, K. G. .... Medical Arts Building  
 Paulus, D. D. .... 300 W. 12th  
 Payte, J. I. .... Medical Arts Building  
 Penick, G. .... Colcord Building  
 Phelps, A. S. .... Medical Arts Building  
 Pine, J. S. .... Medical Arts Building  
 Points, Blair ..... Luther  
 Postelle, J. M. .... Medical Arts Building  
 Pounders, Carroll M. .... 1200 N. Walker  
 Price, J. S. .... Osler Building  
 Reck, John A. .... Colcord Building  
 Reed, Horace ..... Osler Building  
 Reed, Jas. R. .... Medical Arts Building  
 Reichman, Ruth S. .... Medical Arts Building  
 Riely, Lea A. .... Medical Arts Building  
 Riley, J. W. .... 119 W. 5th  
 Rinkle, H. J. .... Osler Building  
 Robinson, J. H. .... 300 W. 12th  
 Roddy, John A. .... Ramsey Tower  
 Roland, M. M. .... Medical Arts Building  
 Rolater, J. B. .... Cave Springs, Ga.  
 Rosenberger, F. E. .... 208 Security Building  
 Rountree, C. R. .... 1200 N. Walker  
 Rucks, W. W. .... 300 W. 12th.  
 Rucks, Jr., W. W. .... 300 W. 12th  
 Ruhl, A. M. .... Edmond  
 Runkle, R. E. .... Perrine Building  
 Sackett, L. M. .... Perrine Building

Salsbury, C. L. .... 200 E. 14th  
 Salmon, A. L. .... 1200 N. Walker  
 Sands, A. J. .... Choctaw  
 Sanger, F. A. .... Key Building  
 Sanger, F. M. .... Key Building  
 Sanger, Winnie M. .... Key Building  
 Sewell, Bennett N., Gordon Bldg., St. Charles, La.  
 Shelton, J. W. .... Medical Arts Building  
 Shuler, A. C. .... Fitzsimmons Hosp., Denver, Colo.  
 Smith, Chas. A. .... Medical Arts Building  
 Smith, Delbert G. .... Medical Arts Building  
 Smith, L. L. .... 2915 S. Harvey  
 Smith, M. .... 1400 Classen Blvd.  
 Snow, J. B. .... Osler Building  
 Starr, N. S. .... Medical Arts Building  
 Starry, L. J. .... 1200 N. Walker  
 Stillwell, Robt. J. .... First Nat'l Building  
 Stone, S. N. .... Edomnd  
 Stout, Marvin E. .... 209 W. 13th  
 Strader, S. E. .... Medical Arts Building  
 Strother, S. P. .... 120 N. W. 23rd  
 Sullivan, Ernest ..... Hightower Building  
 Sullivan, E. S. .... Medical Arts Building  
 Tabor, Geo. R. .... First Nat'l Building  
 Taylor, C. B. .... Medical Arts Building  
 Taylor, William ..... Osler Building  
 Thompson, Waymon J. .... Osler Building  
 Thuringer, Joseph M. .... 801 E. 13th  
 Todd, H. C. .... Colcord Building  
 Townsend, C. W. .... Medical Arts Building  
 Turner, Henry H. .... 319 Osler Building  
 Underwood, E. L. .... 516 Hales Building  
 Valberg, E. R. .... Perrine Building  
 Von Wedel, C. O. .... Colcord Building  
 Wails, T. G. .... Medical Arts Building  
 Walker, J. L. .... First Nat'l Building  
 Wallace, W. J. .... Medical Arts Building  
 Warmack, J. C. .... 1615 N. Robinson  
 Weir, M. W. .... Ramsey Tower  
 Wells, Eva ..... Medical Arts Building  
 Wells, W. W. .... Medical Arts Building  
 West, W. K. .... Osler Building  
 Westfall, L. M. .... Medical Arts Building  
 White, Oscar P. .... Osler Building  
 White, Phil ..... 310-311 Perrine Building  
 Wildman, S. F. .... Medical Arts Building  
 Wilkins, Harry ..... Medical Arts Building  
 Williams, H. M. .... Medical Arts Building  
 Williams, L. C. .... Osler Building  
 Williamson, W. H. .... First Nat'l Building  
 Wilson, E. C. .... Medical Arts Building  
 Wilson, K. J. .... Medical Arts Building  
 White, Arthur W. .... Medical Arts Building  
 Wolff, J. P. .... Medical Arts Building  
 Woodward, Neil W. .... Osler Building  
 Wright, Harper ..... 240 W. Commerce  
 Yeakel, E. L. .... Medical Arts Building  
 Young, A. M. .... Perrine Building

## OKMULGEE

Alexander, Lin ..... Severs Building  
 Alexander, T. C. .... Severs Building  
 Bollinger, I. W. .... Henryetta  
 Berry, Thos. M. .... 5th and No. Morton  
 Boswell, H. D. .... 509 W. Cummings  
 Carlross, T. C. .... Morris  
 Carnell, M. D. .... Commerce Building  
 Cooke, C. H. .... Okmulgee Building  
 Cott, W. M. .... Commerce Building  
 Edwards, J. G. .... Commerce Building  
 Glismann, M. B. .... McCulloch Building  
 Holmes, A. R. .... 414½ West Main  
 Hudson, W. S. .... Kennedy Building  
 Kilpatrick, G. A. .... 420½ West Main  
 Leslie, S. B. .... 108 E. Main  
 Matheney, J. C. .... Commerce Building

McKinney, G. Y. ....	414½ West Main
Milroy, J. A. ....	119 S. Delaware
Ming, C. M. ....	220 S. Morton
Mitchener, W. C. ....	220 S. Morton
Nelson, J. P. ....	Schulter
Raines, H. L. ....	McCulloch Building
Randell, D. M. ....	Commerce Building
Randell, H. O. ....	Commerce Building
Rembert, J. J. C. ....	McCulloch Building
Robinson, J. C. ....	414½ W. Main
Sanderson, W. C. ....	Pharaoh Building
Shelton, Thos. H. ....	Okmulgee Building
Simpson, N. N. ....	802 West Broadway
Stark, W. W. ....	220 S. Morton
Torrance, L. B. ....	205½ W. 7th
Vernon, W. C. ....	220 S. Morton
Wallace, V. M. ....	Morris
Watson, F. S. ....	Commerce Building
Watson, W. S. ....	Commerce Building

## OSAGE

Aaron, W. H. ....	Pawhuska
Alexander, E. T. ....	Barnsdall
Barritt, R. J. ....	Pawhuska
Baylor, R. A. ....	Fairfax
Caton, C. N. ....	Wynona
Chase, W. W. ....	Barnsdall
Colley, T. J. ....	Hominy
Dozier, B. E. ....	Webb City
First, F. R. ....	1133 S. Harvard, Tulsa
Goss, G. W. ....	Pawhuska
Govan, T. P. ....	Pawhuska
Guild, C. H. ....	Shidler
Hemphill, Paul ....	Pawhuska
Karasek, M. ....	Shidler
Keyes, E. C. ....	Shidler
Lipe, E. N. ....	Fairfax
Logan, C. K. ....	Hominy
Reed, J. M. ....	Magnolia Springs, Alabama
Rust, M. E. ....	Pawshuka
Stanbro, G. E., St. Thomas Hosp., Nashville, Tenn.	
Sullivan, B. F. ....	Barnsdall
Summers, H. L. ....	Marion, Ill.
Walker, G. I. ....	Hominy
Walker, Roscoe ....	Pawhuska
Worten, Divonis ....	Pawhuska
Williams, C. W. ....	Pawhuska
Wood, Harold A. ....	Osage

## OTTAWA

Aisenstadt, A. E. ....	Picher
Barry, J. R. ....	Picher
Cannon, R. F. ....	Miami
Chesnut, W. G. ....	General Hosp., Utica, N. Y.
Colvert, G. W. ....	Miami
Cooter, A. M. ....	Miami
Connell, D. L. ....	Picher
Craig, J. W. ....	Miami
Deans, F. R. ....	Miami
DeArman, M. M. ....	Miami
DeArman, Tom M. ....	Miami
DeTar, Geo. A. ....	Miami
Dolan, W. M. ....	Picher
Hampton, J. B. ....	Commerce
Harper, R. H. ....	Afton
Helm, F. P. ....	Miami
Hughes, A. R. ....	Wyandotte
Jacobs, J. C. ....	Miami
Jacoby, J. S. ....	Commerce
Lightfoot, J. B. ....	Miami
Miller, H. K. ....	Fairland
McCallum, Chas. ....	Quapaw
Meriwether, F. V. ....	Miami
McNaughton, G. P. ....	Miami
Moon, J. T. ....	Miami
Pinnell, General ....	Miami

Ralston, B. W. ....	Commerce
Russell, Richard ....	Picher
Shelton, B. Wright ....	Miami
Smith, Wm. B. ....	Miami
Wormington, F. L. ....	Miami

## PAWNEE

Beitmen, C. E. ....	Skeede
Carmichael, M. M. ....	Osage
Haddox, C. H. ....	Pawnee
Jones, R. E. ....	Pawnee
McFarland, H. B. ....	Cleveland
Robinson, E. T. ....	Cleveland
Spaulding, Harry B. ....	Ralston

## PAYNE

Adams, James E. ....	Cushing
Beach, C. H. ....	Glencoe
Bergegrun, Katherine ....	Stillwater
Cleverdon, L. A. ....	Stillwater
Davis, Benjamin ....	Cushing
Davidson, W. N. ....	Cushing
Friedemann, Paul W. ....	Stillwater
Graham, R. N. ....	Yale
Harris, E. M. ....	Cushing
Herrington, D. J. ....	Cushing
Holbrook, W. R. ....	Perkins
Hudson, W. B. ....	Yale
Leatherock, R. E. ....	Cushing
Love, T. A. ....	Cushing
Manning, H. C. ....	Cushing
Martin, Emmett O. ....	Cushing
Martin, John W. ....	Cushing
Martin, J. F. ....	Stillwater
McCartney, Vivian M. ....	Stillwater
Mitchell, L. A. ....	Stillwater
Mitchell, W. C. ....	Yale
Perry, D. L. ....	Cushing
Richardson, P. M. ....	Cushing
Roberts, R. E. ....	Stillwater
Sexton, C. E. ....	Stillwater
Waggoner, R. E. ....	Stillwater
Wilhite, L. R. ....	Perkins

## PITTSBURG

Barton, V. H. ....	McAlester
Baum, F. J. ....	McAlester
Bunn, A. D. ....	Savanna
Bright, J. B. ....	Kiowa
Brunson, C. J. ....	McAlester
Carlock, A. E. ....	Hartshorne
Chapman, T. S. ....	McAlester
Crews, J. W. ....	Atwood
Davis, J. E. ....	McAlester
Dorough, Joe ....	Haileyville
Echols, J. W. ....	McAlester
George, L. J. ....	Stuart
Hailey, W. P. ....	Haileyville
Harris, C. T. ....	Kiowa
Hudson, W. K. ....	Hartshorne
Johnston, J. C. ....	McAlester
Kies, B. B. ....	No. McAlester
Kilpatrick, G. A. ....	McAlester
Kuyrkendall, L. C. ....	McAlester
Lewallen, W. P. ....	Canadian
McCarley, T. H. ....	McAlester
Miller, Frank A. ....	Hartshorne
Munn, J. A. ....	McAlester
Norris, T. T. ....	Krebs
Park, J. F. ....	McAlester
Pearce, C. M. ....	McAlester
Pemberton, R. K. ....	McAlester
Ramsay, W. G. ....	Quinton
Rice, O. W. ....	McAlester
Sames, W. W. ....	Hartshorne
Shankle, H. D. ....	

U. S. Veterans Hosp., Ft. Harrison, Montana



Shuller, E. H. ....	McAlester
Wait, W. C. ....	McAlester
Watson, F. L. ....	McAlester
Welch, A. J. ....	McAlester
Williams, C. O. ....	McAlester
Willour, L. S. ....	McAlester
Wilson, Herbert A. ....	McAlester
Wilson, McClellan ....	McAlester

## PONTOTOC

Breco, J. G. ....	Ada
Brydia, Catherine ....	Ada
Canada, E. A. ....	Ada
Castleberry, R. T. ....	Ada
Craig, J. R. ....	Ada
Cummings, I. L. ....	Ada
Dawson, B. B. ....	Ada
Dean, W. F. ....	Ada
Forsythe, Grant ....	Allen
King, R. F. ....	Ada
Lane, Wilson H. ....	Ada
Lewis, E. F. ....	Ada
Lewis, M. L. ....	Ada
McKeel, Sam ....	Ada
McNew, M. C. ....	Ada
Miller, O. H. ....	Ada
Needham, C. F. ....	Ada
Ross, S. P. ....	Ada
Rutledge, J. A. ....	Ada
Sugg, Alfred R. ....	Ada
Threlkeld, W. R. ....	Ada
Webster, M. M. ....	Ada
Welborn, O. E. ....	Ada

## POTTAWATOMIE

Anderson, Robert M. ....	Shawnee
Applewhite, G. H. ....	Shawnee
Baker, McKinzie A. ....	Shawnee
Ball, W. A. ....	Wanette
Baxter, Geo. S. ....	Shawnee
Blount, W. T. ....	Maud
Brown, R. A. ....	Prague
Byrum, J. M. ....	Shawnee
Campbell, Hiram G. ....	Shawnee
Carson, F. LeRoy ....	Shawnee
Cordell, U. S. ....	Macomb
Culbertson, Roland R. ....	Maud
Douglas, R. A. ....	Asher
Fortson, J. L. ....	Tecumseh
Gallaher, F. Clinton ....	Shawnee
Gallaher, W. M. ....	Shawnee
Gaston, John L. ....	Shawnee
Gillick, David W. ....	Shawnee
Hughes, Horton E. ....	Shawnee
Hughes, John E. ....	Shawnee
Isvekov, V. G. ....	Huntsville, Texas
Kaylor, R. C. ....	McLoud
McAdams-Williams, Alpha ....	Shawnee
McClendon, J. W. ....	Earlsboro
McFarling, Alonzo C. ....	Shawnee
Morrison, H. C. ....	Maud
Newlin, Frances P. ....	Shawnee
Norvell, Elijah E., 222½ W. Commerce, Okla. City	
Paramore, Chas. F. ....	Shawnee
Rice, E. Eugene ....	Shawnee
Rowland, T. D. ....	Shawnee
Royster, J. H. ....	Wanette
Sanders, Thos. C. ....	Shawnee
Scott, John H. ....	Shawnee
Shivers, Eraine ....	St. Louis, Okla.
Stevens, Walter S. ....	Shawnee
Stooksbury, J. M. ....	Shawnee
Terrell, Ernest P. ....	Shawnee
Turner, Jas. H. ....	Cumberland Hosp., New York
Wagner, H. A. ....	Shawnee
Walker, John Asa ....	Shawnee

Walker, J. E. ....	Shawnee
Wright, Herbert L. ....	Shawnee

## PUSHMATAHA

Ball, Ernest ....	Sulphur
Burnett, J. A. ....	Waldron, Ark.
Connally, D. W. ....	Clayton
Huckabay, B. M. ....	Antlers
Johnson, H. C. ....	Antlers
Lawson, John S. ....	Clayton
Patterson, E. S. ....	Antlers

## ROGERS

Anderson, F. A. ....	Claremore
Arnold, A. M. ....	Claremore
Bassman, Caroline ....	Claremore
Beson, C. W. ....	Claremore
Bushyhead, J. C. ....	Claremore
Collins, B. F. ....	Claremore
Hays, W. F. ....	Claremore
Howard, W. A. ....	Chelsea
Jennings, K. D. ....	Chelsea
Mason, W. S. ....	Claremore
Meloy, R. C. ....	Claremore
Nelson, Ira ....	Indian Hospital, Claremore

## SEMINOLE

Bates, C. W. ....	Seminole
Bates, J. A. ....	Seminole
Black, W. R. ....	R. F. D. No. 3, Seminole
Briggs, T. H. ....	Wewoka
Butler, O. C. ....	Seminole
Chambers, C. S. ....	Seminole
Davis, John ....	Seminole
Deaton, A. N. ....	Wewoka
Geisen, Andrew F. ....	Konawa
Harber, J. N. ....	Seminole
Harrison, T. F. ....	Wewoka
Hampton, K. P. ....	Seminole
Huddleston, W. T. ....	Konawa
Kiles, H. A. ....	Konawa
Knight, W. L. ....	Wewoka
Long, W. J. ....	Konawa
Martin, W. S. ....	Wewoka
McAlister, E. R. ....	Seminole
Mills, N. W. ....	Snomac
Mosher, D. D. ....	Seminole
Pace, L. R. ....	Seminole
Reeder, H. M. ....	Konawa
Reynolds, Jas. B. ....	Seminole
Shaw, D. B. ....	Seminole
Stephens, A. B. ....	Seminole
Turlington, M. M. ....	Seminole
Van Sandt, Guy B. ....	Wewoka
Van Sandt, M. Morton ....	Wewoka
Ware, T. H. ....	Seminole

## SEQUOYAH

Bryan, Cecil ....	Vian
Morrow, J. A. ....	Sallisaw

## STEPHENS

Brewer, J. W. ....	Marlow
Burnett, B. H. ....	Duncan
Carmichael, J. B. ....	Duncan
Chumley, C. P. ....	Duncan
Garrett, S. S. ....	County Line
Harrison, C. M. ....	Comanche
Ivy, W. S. ....	Duncan
Lindley, C. E. ....	Duncan
Linzy, J. H. ....	Comanche
Long, D. ....	Duncan
McClain, W. Z. ....	Marlow
McMahan, A. M. ....	Duncan
Nieweg, J. W. ....	Duncan
Overton, L. M. ....	Tecumseh
Patterson, J. L. ....	Duncan

Pruitt, C. C. ....	Comanche
Richards, C. C. ....	Marlow
Richardson, R. W. ....	Comanche
Russell, R. L. ....	Marlow
Salmon, W. T. ....	Duncan
Tabor, G. E. ....	Marlow
Talley, C. N. ....	Marlow
Weedn, A. J. ....	Duncan
Wilbourn, C. E. ....	Loco
Williamson, S. H. ....	Duncan

## TEXAS

Hayes, R. B. ....	Guymon
Langston, Wm. J. ....	Guymon
Lee, Daniel S. ....	Guymon
Risen, Wm. J. ....	Hooker
Smith, Morris ....	Guymon
Wilson, C. E. ....	Boise City

## TILLMAN

Allen, C. C. ....	Frederick
Arrington, J. E. ....	Frederick
Bacon, O. G. ....	Frederick
Childers, J. E. ....	Tipton
Fisher, R. L. ....	Frederick
McKeller, M. M. ....	Loveland
Osborne, Jr., J. D. ....	Frederick
Reynolds, J. C. ....	Frederick
Spurgeon, T. F. ....	Frederick
Wilson, H. H. ....	Frederick
Wilson, R. E. ....	Davidson

## TULSA

Allen, V. K. ....	1001 Medical Arts Building
Allison, T. P. ....	Sand Springs
Ament, C. M. ....	305 Ritz Building
Anderson, E. S. ....	Sobbian Plaza Apartments
Armstrong, O. C. ....	915 Medical Arts Building
Atchley, R. Q. ....	507 Medical Arts Building
Atkins, P. N. ....	1011 Medical Arts Building
Barry, W. R. ....	20 N. College
Baum, E. E. ....	510 Medical Arts Building
Beyer, J. Walter ....	501 Palace Building
Billington, J. J. ....	404 Medical Arts Building
Black, H. J. ....	209 Medical Arts Building
Bolton, J. Fred ....	211 Medical Arts Building
Bradley, C. E. ....	202 Medical Arts Building
Bradfield, S. J. ....	607 Medical Arts Building
Branley, B. L. ....	208 Medical Arts Building
Braswell, J. C. ....	1109 Medical Arts Building
Brogden, J. C. ....	708 Mayo Building
Brown, Paul R. ....	517 Medical Arts Building
Browne, H. S. ....	616 Medical Arts Building
Brookshire, J. E. ....	507 Palace Building
Bryan, Jr., W. J. ....	801 Medical Arts Building
Butcher, J. P. ....	2428 E. 6th
Calhoun, W. H. ....	208 Atlas Life Building
Calhoun, C. E. ....	Sand Springs
Callahan, H. W. ....	902 Medical Arts Building
Campbell, W. M. ....	1301½ E. 15th
Chalmers, J. S. ....	Sand Springs
Charbonnet, P. N. ....	206 Medical Arts Building
Childs, H. C. ....	710 Medical Arts Building
Childs, J. W. ....	710 Medical Arts Building
Clinton, F. S. ....	823 Wright Building
Clulow, G. ....	302 Philcade Building
Cohenour, E. L. ....	1102 Medical Arts Building
Cook, W. A. ....	1107 Medical Arts Building
Coulter, T. B. ....	1011 Medical Arts Building
Cronk, F. Y. ....	801 Medical Arts Building
Davis, A. H. ....	604 S. Cincinnati
Davis, B. J. ....	Sand Springs
Davis, T. H. ....	404 Medical Arts Building
Dean, W. A. ....	610 Medical Arts Building
Denny, E. R. ....	809 Medical Arts Building
Dieffenbach, N. J. ....	221 Castle Building
Dillon, C. A. ....	209 New Daniels Building

Dunlap, R. W. ....	808 Medical Arts Building
Dunseth, G. O. ....	117 W. 4th
Emerson, A. V. ....	211 Medical Arts Building
Evans, H. J. ....	202 Medical Arts Building
Farris, H. L. ....	303 Medical Arts Building
Feehan, W. J. ....	807 S. Elgin
Flack, F. L. ....	822 Mid-Continent Building
Flannagan, O. A. ....	302 Medical Arts Building
Ford, R. B. ....	404 Medical Arts Building
Franklin, O. ....	Broken Arrow
Fulcher, J. ....	417 Medical Arts Building
Garabedian, G. ....	1235 S. Boulder
Garrett, D. L. ....	604 S. Cincinnati
Geissler, P. C. ....	2224 S. St. Louis
Gilbert, J. B. ....	307 Roberts Building
Glass, F. A. ....	404 Medical Arts Building
Goodman, S. ....	603 Medical Arts Building
Gorrell, J. F. ....	610 Medical Arts Building
Graham, H. ....	1235 S. Boulder
Graff, B. ....	1702 S. Quannah
Green, Harry ....	1116 Medical Arts Building
Grosshart, Ross ....	517 Wright Building
Goddard, R. K. ....	Skiatook
Hall, G. H. ....	420 McBirney Building
Haralson, C. H. ....	816 Medical Arts Building
Harris, B. ....	Jenks
Hart, M. O. ....	708 Medical Arts Building
Hart, M. M. ....	1855 E. 17th
Hartgraves, T. ....	Morningside Hospital
Haskins, T. M. ....	336 Richards Building
Hawley, Z. D. ....	1215 Atlas Life Building
Henderson, F. W. ....	304 Medical Arts Building
Henley, M. D. ....	911 Medical Arts Building
Henry, Gifford, ....	801 Medical Arts Building
Hoke, C. C. ....	901 Petroleum Building
Hooper, J. S. ....	317 Medical Arts Building
Houser, M. A. ....	608 Tulsa Trust Building
Huber, W. A. ....	114 Medical Arts Building
Hudson, D. V. ....	305 Medical Arts Building
Humphrey, B. H. ....	Sperry
Hutchinson, A. ....	Bixby
Hyatt, E. G. ....	604 S. Cincinnati
Jackson, L. T. ....	206½ S. Main
Jones, W. M. ....	204 Medical Arts Building
Johnson, C. D. ....	1116 Medical Arts Building
Kemmerly, H. P. ....	903 Medical Arts Building
Larrabee, W. S. ....	411 Medical Arts Building
Laws, J. A. ....	Broken Arrow
Lee, J. K. ....	211 Medical Arts Building
LeMaster, D. W. ....	902 Medical Arts Building
Lhevine, M. B. ....	1007 Medical Arts Building
Lowe, J. O. ....	319 Philcade Building
Lynch, T. J. ....	319 Philcade Building
MacKinzie, Ian ....	807 S. Elgin
McKeller, M. ....	604 S. Cincinnati
Margolin, B. ....	215 Medical Arts Building
Marshall, J. C. ....	709 S. Jackson
Mayginnis, P. H. ....	505 Palace Building
McAnally, W. F. ....	Box 1756, Pittsburg, Pa.
McComb, L. A. ....	801 Medical Arts Building
McDonald, D. M. ....	114 E. 6th
McDonald, J. E. ....	216 Medical Arts Building
McGill, R. A. ....	1010 Medical Arts Building
McGuire, H. J. ....	309 Medical Arts Building
McLean, B. W. ....	Jenks
McQuaker, Molly ....	1607 E. 12th
Miller, G. H. ....	215 Atlas Life Building
Minor, J. L. ....	114 E. 6th
Mohrman, S. S. ....	611 New Daniels Building
Murdock, H. D. ....	1011 Medical Arts Building
Murray, P. G. ....	506 Medical Arts Building
Murray, S. ....	501 Medical Arts Building
Myers, F. C. ....	102½ E. 3rd
Nelson, F. J. ....	603 Medical Arts Building
Nelson, F. L. ....	614 New Daniels Building
Nelson, I. A. ....	St. Johns Hospital



Nelson, M. O. ....	307 Medical Arts Building
Nesbitt, E. P. ....	917 Medical Arts Building
Nesbitt, P. P. ....	917 Medical Arts Building
Norman, G. ....	2543 E. Admiral Street
Northrup, L. C. ....	410 McBirney Building
O'Hern, C. D. F. ....	501 Medical Arts Building
Osborne, Geo. ....	801 Medical Arts Building
Pavy, C. A. ....	812 Medical Arts Building
Peden, J. C. ....	612 Medical Arts Building
Perry, Hugh ....	417 McBirney Building
Perry, John C. ....	3330 E. 11th
Pigford, A. W. ....	1001 Medical Arts Building
Pigford, R. C. ....	1001 Medical Arts Building
Porter, H. H. ....	320 Philcade Building
Presson, L. C. ....	902 Medical Arts Building
Price, H. P. ....	407 Medical Arts Building
Proctor, C. A. ....	404 Medical Arts Building
Reese, K. C. ....	604 S. Cincinnati
Reynolds, J. L. ....	723 Mayo Building
Richey, S. M. ....	1304½ W. 17th
Rhodes, R. L. ....	509 Medical Arts Building
Roberts, T. R. ....	2647 E. 7th
Rodgers, J. W. ....	407 Medical Arts Building
Roth, A. W. ....	607 Medical Arts Building
Roy, Emile ....	904½ S. Main
Ruprecht, H. A. ....	604 S. Cincinnati
Rushing, F. E. ....	505 Medical Arts Building
Sabin, C. W. ....	336 Richards Building
Searle, M. J. ....	502 Medical Arts Building
Shepard, R. M. ....	306 Medical Arts Building
Shepard, S. C. ....	410 Medical Arts Building
Sherwood, R. G. ....	208 Masonic Building
Showman, W. A. ....	409 Medical Arts Building
Simpson, Carl F. ....	301 Medical Arts Building
Sipple, M. E. ....	217 Medical Arts Building
Sisler, Wade ....	807 S. Elgin
Smith, D. O. ....	604 S. Cincinnati
Smith, J. H., 216 Isham Building, Longview, Tex.	
Smith, N. R. ....	703 Medical Arts Building
Smith, Roy L. ....	710 Medical Arts Building
Smith, R. N. ....	1017 Medical Arts Building
Smith, R. R. ....	403 New Daniels Building
Smith, R. V. ....	607 Medical Arts Building
Smith, W. O. ....	323 Philcade Building
Springer, M. P. ....	604 S. Cincinnati
Stallings, T. W. ....	114 W. 4th
Stanley, Mont V. ....	509 New Daniels Building
Stemmons, J. M. ....	Collinsville
Stevenson, James ....	616 Medical Arts Building
Stewart, H. B. ....	1516 E. 21st
Stuart, L. H. ....	316 Roberts Building
Summers, C. S. ....	611 New Daniels Building
Trainor, W. J. ....	1011 Medical Arts Building
Tucker, I. N. ....	702 Medical Arts Building
Underwood, D. J. ....	708 Mayo Building
Underwood, F. L. ....	1001 Medical Arts Building
Venable, S. C. ....	720 Mayo Building
Walker, W. A. ....	410 S. Cincinnati
Wall, G. A. ....	903 Medical Arts Building
Wallace, J. E. ....	914 Medical Arts Building
Wainright, A. G. ....	McBirney Building
Ward, B. W. ....	823 Wright Building
Ward, H. P. ....	Leonard
White, D. W. ....	311 Medical Arts Building
White, N. S. ....	416 Medical Arts Building
White, P. C. ....	311 Medical Arts Building
Wiley, A. R. ....	811 Medical Arts Building
Wilks, F. M. ....	Collinsville
Witcher, E. K. ....	909 Medical Arts Building
Witcher, R. B. ....	909 Medical Arts Building
Woods, C. J. ....	511 Medical Arts Building
Young, C. W. ....	Cleveland
Zink, G. W. ....	Red Fork
Zink, H. F. ....	414 Security Building
Zink, R. A. ....	414 Security Building

## WAGONER

Bates, S. R. ....	Wagoner
Leonard, John D. ....	Wagoner
Plunkett, J. H. ....	Wagoner
Riddle, H. K. ....	Coweta
Waltrip, J. R. ....	Coweta

## WASHINGTON

Athey, John V. ....	Bartlesville
Beechwood, Emory E. ....	Bartlesville
Cannon, James M. ....	Bartlesville
Chamberlin, Elizabeth M. ....	Bartlesville
Crawford, Gwen W. ....	Dewey
Crawford, Horace G. ....	Bartlesville
Crawford, John E. ....	Bartlesville
Crawford, Thomas O. ....	Dewey
Dorsheimer, Geo. V. ....	Dewey
Etter, Forrest S. ....	Bartlesville
Green, Otto I. ....	Bartlesville
Hall, Ulysses, G. ....	Copan
Hudson, Lawrence D. ....	Dewey
Kingman, Wm. H. ....	Bartlesville
*Kiser, Jefferson D. ....	Bartlesville
LeBlanc, Wm. ....	Ochelata
Parks, Seth M. ....	Bartlesville
*Rammell, Wilbur E. ....	Bartlesville
Rewerts, Fred C. ....	Bartlesville
Shipman, Wm. H. ....	Bartlesville
Smith, Joseph G. ....	Bartlesville
Somerville, Okey S. ....	Bartlesville
Staver, Benj. F. ....	Bartlesville
*Tillison, Chas. K. ....	Ramona
Torrey, John P. ....	Bartlesville
Vansant, James P. ....	Dewey
Weber, Henry C. ....	Bartlesville
Weber, Sherwell G. ....	Bartlesville
Wells, Cephas J. ....	Bartlesville
Wells, Milo ....	Bartlesville
Woodring, Geo. F. ....	Bartlesville

## WASHITA

Baker, B. W. ....	Cordell
Bennett, D. W. ....	Sentinel
Bungardt, A. H. ....	Cordell
Freeman, I. S. ....	Rocky
Harms, J. H. ....	Cordell
Hawkins, E. W. ....	Colony
Jones, J. P. ....	Dill
Neal, A. S. ....	Cordell
Stoll, A. A. ....	Foss
Sullivan, C. B. ....	Colony
Tracy, C. M. ....	Sentinel
Weaver, E. S. ....	Cordell
Webber, A. ....	Bessie

## WOODS

Ames, Howard Banks ....	Alva
Bilby, Geo. N. ....	Capitol Bldg., Okla. City
Clapper, Ebenezer P. ....	Waynoka
Ensor, Daniel Boy ....	Hopeton
Grantham, Elizabeth A. ....	Alva
Hale, Arthur E. ....	Alva
Hall, Ray Lormer ....	Waynoka
Hammer, John E. ....	Kiowa, Kansas
Hunt, Isaac S. ....	Freedom
Meek, Frederick B. ....	Alva
Rogers, Chas. Lewis ....	Carmen
Simon, Wm. Ebert ....	Alva
Smedley, Wm. H. ....	Capron
Stephenson, Ishmael F. ....	Alva
Templin, Oscar E. ....	Alva

\*Deceased

WOODWARD

Brace, A. J. .... Vici  
Camp, E. F. .... Buffalo  
Coyne, H. Campbell .... Supply  
Davis, John T. .... Shattuck  
Dawson, D. W. .... Woodward

Johnson, H. L. .... Supply  
Newman, O. C. .... Shattuck  
Patterson, Fred .... Woodward  
Silverthorn, C. R. .... Woodward  
Taylor, Dow .... Supply  
Triplett, T. Burk .... Moreland  
Williams, C. E. .... Woodward



# THE JOURNAL

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OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXV

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NUMBER 7

## SOME RECENT ADVANCES IN THE TREATMENT OF PULMONARY TUBERCULOSIS\*

R. M. SHEPARD  
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The fundamental principles in the treatment of diseases of the lungs are the same that have existed for centuries, that is the triad: fresh air, good food, and rest. All the modern methods of treatment are based upon the extent and character of the disease and the method of obtaining the maximum amount of rest for the lung lesion itself. The X-ray has been a great boon to the study of diseases of the chest. Misguided is the chest specialist who attempts to treat disease of the lungs without the aid of the X-ray. It will show many conditions that cannot be found with the stethoscope and general examination. However we must not depend on the X-ray alone for the entire story. The X-ray should not make a diagnosis nor give the degree of healing or activity, however, serial plates will show the progress.

The treatment of any lung disease should not be undertaken without first securing a satisfactory stereogram of the chest, regardless of the physical findings and clinical symptoms. With an intelligent interpretation of the films with due consideration for symptoms, complications, and physical findings the method of treatment can be planned. After the routine bed rest and the usual dietetic and postural rest regime the more valuable methods are compression or local rest of the lung or diseased area by artificial pneumothorax, phrenicectomy, intra-pleural pneumolysis, multiple intercostal neurectomy, thoracoplasty, and oleothorax.

### ARTIFICIAL PNEUMOTHORAX

Artificial pneumothorax at this time is the outstanding method of treatment of

tuberculosis. It is a known fact that 60% of the cases of active pulmonary tuberculosis should have artificial pneumothorax compression of the lung. The selection of cases for pneumothorax, and the indications for its use, should be based upon the condition of the patient and the extent of involvement and not upon the endeavor for good statistics.

Since the World war the therapeutic value of artificial pneumothorax in the treatment of pulmonary tuberculosis has become so well recognized that it is a part of equipment of practically every chest specialist in the world.

Many times artificial pneumothorax should be done when the operator finds the patient far advanced, both lungs involved, and very little chance of recovery without radical interference. It is indicated in all cases of cavities as the first method of choice to close the cavity and prevent the further spreading of the infection, in the cavity lung or contra-lateral lung, by the bronchial tree. In the ideal patient the contra-lateral lung should be relatively clear, however, with a progressive disease, great loss of weight, high temperature, cough, and profuse expectoration, pneumothorax should be instituted guardedly and cautiously in the active lung. Frequently the contra-lateral lung will improve when the more diseased lung is compressed. A free pleural space is essential for an ideal working collapse to be secured. Persistent or large hemoptysis is a definite indication for pneumothorax. Many lives have been saved by the prompt administration of artificial pneumothorax in cases of profuse, continuous, hemorrhage.

The use of pneumothorax in lung abscesses and bronchiectasis must be carefully considered and administered only in cases where there is adequate drainage to the bronchus or abscessed near the hilus. Most patients will see a marked decline in their temperature, cough, and expectoration after pneumothorax has been administered, however, there usually is some

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disturbance of the appetite with a slight loss of weight during the first few treatments. In large cavities, beneath the pleura, of long standing and an active infection in the contra-lateral lung pneumothorax is hazardous because more likely there will be pleural adhesions near the cavity and tuberculous pleuritis will subsequently develop by the tubercle bacilli permeating the cavity wall into the pleural space, or rupture of the pleural wall in stripping the visceral from the parietal pleura by the air.

In suitable cases of pneumothorax the first treatments are given in small amounts and at short intervals. The amount and intervals being increased to 500 to 700 c.c. of air and the intervals sometimes as much as six weeks. The course of treatments should run for two to four years. The writer has seen many patients return to eight hour a day work after three months treatment even when an entire lung was involved with cavitation.

Attempted or induced artificial pneumothorax may have some complication. Puncture of the lungs may cause slight hemoptosis, and embarrassment to the operator, but usually is not a serious condition. Pleural effusion occurs in about 18% of the writer's cases. This effusion frequently is of no consequence but if extensive should be removed. Effusion is most frequently noted where high pressure is used or pneumothorax done while the patient has a common "cold." Empyema is of serious consequence and usually results from an infection from the lung and most often a sub-pleura tubercular rupturing into the pleural space. Treatment should be by repeated aspiration and the injection of oil—Gomenol. Never do an open drainage except as a last resort. We find a few patients that have a sensitive pleura with reactions to the injection of air alone, then pneumothorax has to be discontinued. At present artificial pneumothorax offers the tuberculous the greatest ray of hope.

#### PHRENICECTOMY

Phrenicectomy is indicated in basal infection of tuberculosis, bronchiectasis, lung abscess near the base or hilus, and in cavities that cannot be closed by artificial pneumothorax, or where there are so many adhesions between the visceral and parietal pleura that air cannot be injected. The phrenic nerve is severed and the

lower end extracted together with any accessory branches. Radical phrenicectomy will reduce the lung volume from 20 to 30% with the immobilization of the hemi-diaphragm and a rise of the diaphragm into the chest cavity. There is very little results obtained by the phrenicectomy when the diaphragm is fixed or adhered to the base of the lung and chest wall. There is also a lack of results when done in an acute exudative pulmonary tuberculosis. The writer has found that 90% of the cases operated had a great reduction in the cough within twenty-four hours after the operation. There is also a sense of relief in the chest in which the operation is done immediately following the operation with a significant diminution of sputum. Although phrenicectomy is more valuable to close cavities at the base the writer has seen many large cavities at the apex closed by the operation. We must remember that phrenicectomy should be used as an adjunct or substitute for pneumothorax when artificial pneumothorax is impossible and never to supplant artificial pneumothorax.

#### INTRAPLEURAL PNEUMOLYSIS

Two methods are used in doing an intra-pleural pneumolysis, the open method which is done by the removal of a section of rib and dissecting large adhesions of the chest wall and can be used in large adhesions that cannot be severed by cauterization, or closed method. Frequently intra-pleural pneumolysis will give an effective pneumothorax collapse and close cavities where pneumothorax alone or phrenicectomy will fail.

The closed intrapleural pneumolysis as done by the Jacobaeus method or cauterization is the operation of choice in small adhesions that prevent the closing of cavities or complete collapse of active tuberculous lung tissue by artificial pneumothorax. Cauterization is done under local anesthesia and usually requires from one to two hours. A thoracoscope, similar to a cystoscope, is inserted near the adhesions. Care must be used to avoid large blood vessels and lung tissue in the adhesions. Cauterization can be done and pneumothorax continued when the patient is in too poor condition for thoracoplasty. Pleural effusion and empyema is a frequent complication and must be carefully guarded against. When this complication



appears it should be treated as the same complication in pneumothorax.

Intra-pleural pneumolysis should not be done until pneumothorax has been used for several weeks and the pleura has lost its acute engorgement.

#### MULTIPLE INTERCOSTAL NEURECTOMY

Multiple intercostal neurectomy preceded by a phrenicectomy in many patients will give amazing results. It is surprising the amount of immobilization that can be acquired by this method without losing the framework of the chest. The operation is the simple removal of about one inch of the intercostal nerves in a position just external to the rib angle. The operation can be done under local anesthesia and the time required is usually from one to two hours. Paralysis of the second to the tenth intercostal nerves, inclusive, is usually sufficient. It is important that the patient be told before the operation the results to be expected and the experience they will have during and after the operation. During the operation a great deal of pain can be avoided if each intercostal nerve is injected five to ten minutes before it is severed with 2% novocain. Usually immediately after the operation the patient complains of a tight feeling in the chest and a burning numbness throughout the operated side. These sensations usually become less as time goes on. Also after the operation the power to cough and expectorate is greatly lessened.

Great care must be used in selecting the patient for this operation as well as the pre and post operative management. Each patient will be a problem in himself, as in all other methods of treatment. The indications are the same as those for artificial pneumothorax, thoracoplasty and phrenicectomy but cannot supplant any of these operations as each has a field of its own. There are many patients that can have the multiple intercostal neurectomy over the thoracoplasty because of poor general or cardiocirculatory condition or age, and because of the extent of the active condition in the contralateral lung that may advance or spread as a result of the profound effect of the thoracoplasty. The patient often is unable to withstand the prolonged general anesthesia for many reasons but can withstand the local anesthetic operation.

Intercostal neurectomy should not be considered when there is active advancing

condition in the lung with profuse expectoration that the patient might not be able to raise because of the decreased power to expectorate and cause pulmonary stasis. Neither should it be done when there is dyspnea or extremely sensitive diseased myocardium.

#### THORACOPLASTY

Thoracoplasty has won a valuable position in the treatment of tuberculosis in cases of unilateral activity where other methods such as artificial pneumothorax, phrenicectomy, intrapleural pneumolysis and multiple intercostal neurectomy have failed. Thoracoplasty is usually done in two or more stages. A section of all the ribs from first to eleventh inclusive are removed. In view of the fact that all cavities should be closed by some means of interference thoracoplasty will often do it when other methods have failed. However, it is imperative that the contralateral lung be free from any activity and the patient free from any tuberculous complications. It has been of great value in cases where there is large perforations from the lung with subsequent infection and empyemias of the pleura. However, thoracoplasty should not be done until the pleura has been sterilized by the administration of oil—Gomenol. Thoracoplasty as a rule should be preceded by a phrenicectomy and less extensively done on the right side of the chest because of the right heart muscle being thinner and having less resistance to pressure produced by the removal of large amount of ribs. It is an operation not to be considered lightly, but will cure many otherwise hopeless cases.

#### OLEOTHORAX

Oleothorax is the injection of mineral or vegetable oil into the pleural cavity. The indication for its use are to avoid adhesions, close cavities or produce a more successful collapse when artificial pneumothorax is ineffective, to give more rigidity to the pleura when bulging of the mediastinum occurs in pneumothorax and to close the perforation of the lung in which there is empyemia or to sterilize fluid. According to Fountain's statistics about 75% of pneumothorax treatments are complicated by pleuritis, 22% result in fluid or empyema, however, the writer has observed in his own personal experience that about 18% develop fluid or empyema. Pneumothorax is continued to be used in pleurisies that are non-toxic to the patient and recurrence of the

fluid when aspirated. Many times the injection of air by pneumothorax causes a severe reaction followed by malaise and a temperature. This is found in patients that have been taking pneumothorax over a long period of time and oleothorax can be substituted safely with no reaction in the majority of cases. The use of oleothorax for lung perforations is very limited. In a small perforation as the result of the breaking of adhesions, rupture of the visceral pleura, or the small subcortical vomica not connected with the bronchus justifies an oleothorax. Valvular perforations where the air can escape from the lung into the pleural space and not return into the lung will be benefited by oleothorax. Cavities that are held open by small adhesions with positive pressure pneumothorax are seldom closed by oleothorax. In rare instances for some reason there is a rapid absorption of air in pneumothorax and a collapse cannot be obtained—oleothorax is indicated. Oil Gomenol is indicated in tuberculous pleuritis with effusion. The writer has had two cases of this type that developed severe reaction by the use of a vegetable oleothorax and was compelled to discontinue this treatment.

#### SUMMARY

To sum up the results obtained by the various methods of treatment it seems that compression represents the best recent advance. There is no treatment to equal artificial pneumothorax in the cases where it can be successfully administered, and no other treatment should be substituted or used until pneumothorax has been tried. A patient with an open cavity and tubercle bacilli in the sputum has about one chance in five to live as much as three years unless the cavity is closed or sterilized by some method. Furthermore ridding the sputum of tubercle bacilli will save the infection of many children and others with whom they come in contact. The physician who would treat tuberculosis must keep informed of the advance in various methods for each month brings new experiences and methods of immense value to the public and patient.

## VOCATIONAL REHABILITATION OF TUBERCULOUS PATIENTS

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Rehabilitation, restoring to a former capacity or something approximating a former capacity, is a problem and task which begins the day tuberculosis is diagnosed. Our first thoughts concerning rehabilitation are those relating to vocational guidance and instruction. That, however, is not the case, for the whole treatment of tuberculosis from the first day of convalescence up to the time one is able to maintain himself or herself without danger to future well-being is a problem of rehabilitation. Therefore, we may roughly divide rehabilitation into two divisions—first, the phase in which treatment and care is of greatest consequence, and second, when vocational guidance and instruction can enter and serve as a therapeutic adjunct and be of future value to the patient.

To the present time, our efforts in Oklahoma have been restricted to what so many of us have considered the major question, that is, the first phase, treatment and care only. There is a real need for vocational guidance and instruction among the tuberculous in the United States—and in Oklahoma. At least 25% of the patients discharged from sanatoria yearly are dependent upon some social agency in getting back to work. This means that we have with us 25,000 in the United States who are economically dependent and who are unable to return to their former jobs and must have training for other positions.

In a survey of our own institution at Talihina we find 33% of the patients are amenable to vocational instruction of some description. The gravity of the situation can be partially seen when we realize that at least 33% of economically dependent persons will be forced to look for new forms of employment or find means of continuing their present training.

This, however, is not the most serious aspect. The worst comes when we find that 50% of the cases discharged as arrested from the sanatorium are dead within six years. This alone shows the inability of the patient to work out his or her own salvation. The vast majority of patients leave the sanatorium before an



arrest—so what is the actual toll taken by unwise selection of an occupation? It is palpable that those leaving before an arrest are not in as good physical condition as those who obtain arrested cases, so the mortality must be much higher. No figures are available, but a conservative estimate would be 70%. I say to you that next to an early diagnosis our most important and difficult hurdle is the selection of a vocation and the proper training connected therewith. If this phase is neglected our work is for naught.

After patients have left the sanatorium, few can afford the time or money to take up training which will make them self-supporting. It is demanded that they compete with able-bodied men and women. Being unfitted and in many cases not hardened to labor, a relapse occurs which spells finale to that episode of their lives. Not only are the months of care spent in a sanatorium wasted but the devastating moral effect causes them to lose the valuable self confidence and independence so necessary for one to become a self-supporting and useful citizen. The discouragement plus natural mental stasis, causes them to lose all ambition and aspiration, and they gradually pass into the class known by the rather rough but appropriate term, "Sanatorium Bums." It is with sadness that we find that about 50% suffer a relapse and come under this heading.

Since rehabilitation of tuberculosis patients begins with the finding of tuberculosis, the treatment is the first stage in this rehabilitation. Tuberculosis that is active and producing toxic symptoms requires bed rest, nourishing food, and open air if possible, and other treatments as required in the individual case such as artificial pneumothorax and phrenicectomy, heliotherapy and X-ray treatments. The length of time required for this treatment varies in each case and is determined by the reaction of the patient to the treatment. When the toxemia subsides and the chest findings improve, gradually increased exercise should be instituted, but exercise should be discontinued the moment it is found that it is interfering with the patient's resistance to tuberculosis.

The atmosphere surrounding the patients who are taking the cure is very important as is the esprit de corps. It is sometimes hard to create this atmosphere

in a home, and in early toxic tuberculosis the patient can get this esprit de corps quicker in a tuberculosis sanatorium and learn how to regain his health as well as how to prevent others from becoming infected.

In judging when to increase exercise and when to decrease it, very close observation of each case is required. The patient cannot be properly instructed unless there is close supervision by the doctor. There should be close observation of the temperature, weight, pulse, and personal peculiarities of each patient. Too frequently a patient feels himself as if he were well and will attempt to do things that are injurious because he does not have sufficient knowledge of his actual condition.

If the physician has been successful in getting the full co-operation of patients and they have successfully mastered the rest cure, there comes a time when confidence as to their physical ability has to be re-instated, and there comes a stage of weeks and months during which the patients must be convinced they are able to do a certain amount and get ready to take their place in their communities again. Some patients fail to rehabilitate themselves at this time and become chronic invalids because someone did not understand how to bring them back to a confidence in their ability.

There sometimes develops a condition known as phthisis-phobia or an unreasonable fear of tuberculosis, and this fear cannot be very easily eradicated. After health is regained to the point where occupation can be re-established, it is sometimes necessary for a patient to change his vocation in order to stay well of tuberculosis. For instance, a mechanic may have to become a salesman or a carpenter take up some more sedentary pursuit. This sometimes requires months and years. We who are in tuberculosis work believe that our state sanatorium could be more economically operated and would benefit the most citizens were it considered more of an educational institution than a place to receive advanced cases of tuberculosis. If we should take only the advanced cases, they would be in the sanatorium ranging from a few months to years, and the institution would reach the stage where very few patients would be discharged during the year. The state would be taking care of just a limited

number while many citizens who could recover within nine months or a year were they given the opportunity would move out and give others chances. The schooling these curable cases would get would be carried with them to their homes and would benefit large numbers in each community, while the advanced cases remain in the institution for a long time and finally die without helping anyone except themselves.

Most of these advanced cases are sent to the sanatorium because of their financial condition. Since it is possible to care for only about one-third of the applicants, it seems reasonable that the state should expend its money where the most good can be accomplished. It is no longer a questionable fact that early stages of tuberculosis can be arrested and the arrested cases can be useful to their communities for many, many years, therefore, these early cases should be given first care by the state in order to restore them to health and to useful citizenship as soon as possible.

We frequently receive telephone calls and telegrams saying there is an emergency case that should be admitted to the sanatorium at once. When we receive one of these calls we realize that we are about to get an advanced case of tuberculosis that has no hope for recovery and that the real emergency existed in this case some months or years before. It is not an emergency now but only a matter of time until the Grim Reaper gathers in the harvest.

It is very necessary that medical men acquaint themselves with tuberculosis and with the handling of active cases and the directing of cases who are inactive, because the incidence of tuberculosis in its various forms will range close to fifth or sixth of the mortal diseases in the communities. A working knowledge of the modern methods of treatment and the after care of tuberculosis is paramount if one hopes for success. Too many times we hear our medical men say, "That is a case of tuberculosis; I am not much interested in that disease," and pass it on by. Too many times we use every means at hand to have a moribund case of tuberculosis admitted to the sanatorium while we allow curable cases to progress because they are still able to be up and around.

Although the mortality rate has been reduced 50% within the last 25 years,

tuberculosis is still the most destructive disease among the wage earners of the United States. The majority of deaths occur during a period of life when a person is of the greatest economic value. Although fourth (some say sixth) in the causes of death, the three more fatal diseases—heart disease, pneumonia, and cancer ranking ahead, arterio sclerosis and nephritis, these exact their toll from the aged—or persons usually over the age of 40.

Vocational rehabilitation to date has been a neglected field in Oklahoma. Tuberculosis, being a life-time problem, should be treated as such and we should not consider these patients disposed of when they leave the sanatorium. Rehabilitation is the weakest link in our fight against tuberculosis. Education has long been recognized as a public duty. Education and rehabilitation are a social problem which has been neglected because of expense. Our main concern is with those up to 25 or 30 years of age who cannot go back to their original work, the manual laborers, the young men or women who not only are apt but will have a reasonably long and useful life. The housewives, white collar men, the financially independent, and others of sedentary occupations need only counsel and advice as to their work as it does not demand strenuous physical exertion.

The after-care programs of the eastern sanatoriums cannot be followed by us because of several reasons: first, a difference in location; they draw from the large centers of population and upon returning home, being in a centralized group, can be watched and given personal supervision. Being near industrial centers arrangements can be made with manufacturers for shifts of part time workers under medical supervision. The personnel is different. We have large numbers of farmers—they of factory employees; our problems are dissimilar and our future course different.

The following seems to be the most logical solution:

During the long months at the sanatorium the patient has little to occupy his time and this is the period to start training. Patients should be interviewed and their aptitudes and inclinations noted. Their physical and mental capacities



should be determined and a course tentatively outlined.

For those lacking a common school education, a teacher should be installed who is capable of handling the first eight grades. A basic knowledge of this sort is necessary. Some of our adults are unable to read or write, and many have only about fourth or sixth grade educations.

This also suggests to us the need we have of a teacher for the children. During their tenure at the sanatorium that much time is lost from their school work. It could easily be carried on with little or no interference with their progress, in fact, nearly all state sanatoriums have school facilities for their children patients. The records made in these schools are amazing.

For those who have had these preliminary courses, a business curriculum could be installed and instruction given in conjunction with resting. Courses in shorthand, typing, and elementary bookkeeping could be initiated, and probably carried through successfully—but keep this in mind—if the sanatorium is to serve the purpose of schooling the individual in how to take care of tuberculosis, the problem of vocational rehabilitation will extend through a much longer time than this will require. This brings before us the realization of the need of separate organizations from the sanatorium in order to take care of those persons. Why complicate an already intricate institutional administration such as the sanatorium is, with the addition of such an inadequate and inefficient plan for vocational rehabilitation?

The only practical, and the ideal plan, is the establishment of subsidized communities, separate from the sanatorium, with the express purpose of vocational rehabilitation only. Ultimately, when the public realizes that this is the cheapest and the most efficient way of handling the problem of rehabilitation from the standpoint of utilizing spare time of the patient and the prevention of relapses, then will these communities be established.

In England, the subsidized industrial colony, Papworth, has found much support. Several experiments of this kind are being tried in this country. They involve expense, but there is a beginning realization that it is cheaper to provide this plan for the sanatorium graduate until he is able to resume full employ-

ment, than it is to pay for the inevitable relapse.

Papworth provides:

1. Treatment for the physical condition.
2. Training for a variety of trades.
3. Permanent employment under ideal conditions.
4. Living accommodations in model cottages or hotels.
5. Constant medical supervision.
6. Living conditions for whole families are provided.

In the industrial centers and the big eastern cities, it may be possible to place skilled and unskilled workers in full or part time work, but out here where we have few industries outside of agriculture, the problem is different and difficult. The Papworth plan is the only reasonably efficient answer. The sanatoriums which have been experimenting and making efforts at placement of patients in industry have met with only mediocre success. Part time jobs are few, and few employers wish employees with such limited physical capacities.

Why can't we in Oklahoma profit from these experiments and avoid wasting time and money in this direction and use the proven plan? It is practical and is a solution peculiarly adaptable for use in Oklahoma where we would have even less success in an effort to place patients in industry, which, in many cases, demands too much and the relapse occurs. This plan will work and is the most practical solution to the problem.

Now, let me summarize this problem of vocational rehabilitation in as few words as possible:

1. We all recognize the need for some plan to handle these ex-patients.

2. There is no need to spend time and money in the compilation of statistics and the initiating of an inefficient and inadequate plan to be used in a sanatorium. When speaking of the sanatorium we are assuming that the patient stays there for only a period of schooling.

3. The establishment of subsidized communities would result in four things:

(a) We will be able to discharge patients earlier from sanatoria where beds are maintained at a cost of about \$2.00 a

day to convalescent beds of some type which will cost less, but will be under the supervision of a staff of physicians and nurses. They will be employed for a time each day.

(b) Utilizing their spare time and gradually increasing the work capacity from week to week will enable them to reach an arrested state without danger of over exertion.

(d) There is practically no danger of reactivation under such a plan.

I would like now to offer you a suggestion which will be of great value in the handling of these persons in need of after care. With the exception of the efforts of several county units we have no after-care program. There is one corporation which realizes the monetary saving of such a course. After their employees are graduated from the sanatorium they are not placed in full-time employment immediately but are allowed to rest, take a limited amount of exercise and become acclimated at home for a period of a month or so. If, at the end of that time their condition is such that they may continue, they are allowed to work two or three hours per day for three or four weeks. They are then examined again and if in good condition allowed to go on full time for three months, having regular monthly examinations. After a year of full time duty they are considered as able to take care of themselves with the assistance and advice of the physician at annual examinations.

Now, the various civic organizations, Lions, Rotarians, Kiwanians, etc., could be of inestimable value if they would aid us in the placement of patients. Their co-operation and help would be of value to the patient himself and to the state or community. Each patient we discharge and who returns to his home in need of work could be sent to these organizations with a chart showing his vocation, or vocations compatible with his physical condition, together with his work capacity. If these organizations would assume this responsibility of assisting this individual in finding part time work not deleterious to his well being, it would be a great work. Such an organization would not only be doing the patient a favor but the state as well, in helping to eliminate the possibility of this person becoming a public charge.

DISCUSSION: *Dr. C. Doler*, Superintendent Western Oklahoma Tuberculosis Sanatorium, Clinton.

The subject of "rehabilitation" is most certainly one of vital importance to those of us directly concerned with the care and treatment of the tuberculous.

As was pointed out by the essayist, certainly our work comes to naught unless it is possible that we are able to return the individual to a useful place in society.

We preach and teach that tuberculosis is curable; but, to the casual observer in our state institutions of Oklahoma he would conclude that the incidence of tuberculosis is on the ascendancy and incurable; because he sees 62% of our beds filled with hopeless cases and learns that each institution has a long waiting list. It is an evident fact that we must render our patients "arrested" before we can return them to any place as a useful citizen. But the great outstanding handicap that faces us is the high percentage of far advanced conditions admitted to our state institutions.

To "cure" tuberculosis it must be in early, minimal stage—instituting treatment and care at that time—all other factors being equal and given a patient with average intelligence to carry on after we have pronounced them cured.

As mentioned by the essayist, the larger percentage of our admissions to the state institutions are an indigent class of people who, despite the advantage they might have in early diagnosis and instituting early treatment, are wholly unprepared to return to the same field of activity and carry on even though they become "arrested," for certainly the average case must return to the same avocation as a new vocation is most impossible to place before the average indigent case and that applies more directly to the tenant farmer. The farmer or farmer's wife or even the children of farmers can not have the advantage that people of other occupations can have in that the livelihood of this class of people is won by physical toil and not by mental toil.

The average farmer also has no income other than what he digs out of the ground which is an all important factor in the "rehabilitation" in the "arrested" or "apparently arrested" cases of tuberculosis; that one should have some means of support for two or three years after his sana-



torium treatment and education is an absolute essential.

I do not mean in this to say that the population of our sanatoria is wholly made up of the tenant farmer class of people as that is untrue. But, I do say that the tenant class of people are the indigent class of people in the state and is a class of people who cannot "rehabilitate" despite your sanatorium advantage in every respect. We do, however, have about 15 to 20% admissions who are not the indigent class of people and are able to carry on and our records will bear out that we return "apparently arrested" at least 15% of all admissions.

But, our records do not go any further to account for the manner and methods that they have assumed to "rehabilitate" themselves, only that about 5% of this class are people returning as re-admissions with a subsequent break-down. We know from this that they have not been able to care for themselves properly and carry on in order to hold up and eventually become "arrested."

The essayist mentioned "the community" propositions. This is the ideal thing; but, I am a little skeptical at this time, when the economic conditions of our state are so depressed that a program of this nature would gain prejudice in this respect to the point of not being carried out.

I do say that it is the most feasible and practical plan but if expected to be maintained by taxation I am candidly of the opinion that we are advocating something at least ten (10) years in advance of conditions. Nevertheless, many states and private institutions are going forward in a program such as outlined in the essayist's paper and I must say that Oklahoma with all of its commercial resources and splendid citizenry should awaken to the fact that unless we can offer something of this nature the work already being carried on is of little economic purport, and it is not showing a direct progressive spirit toward the great scheme as is accounted for and proven to be of merit by other states and institutions.

We are realizing that a program carried forward to rehabilitate the ex-tuberculous is largely the same that should be brought to bear that are borne

in the direct treatment of the dismissed person; and, that of an intensive, educational program with clinics established throughout the state for the purpose of examining and observing as well as carrying out the treatment as started by the sanatoria.

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#### THE TEACHING OF RADIOLOGY TO INTERNS

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James T. Case, Chicago (Journal A. M. A. March 19, 1932), states that it is evidently quite necessary, if interns are to be given x-ray instruction, to formulate a definite program which can be followed out. He enumerates some of the things he believes it essential for an intern to learn about the x-rays thus: (1) the nature and origin of x-rays and of secondary radiation, and the physical and biologic laws that apply to them; (2) the scope of roentgen examinations; (3) fluoroscopic control of the reduction of fractures and dislocations and in the removal of foreign bodies; (4) roentgen interpretation; (5) roentgen terminology, and (6) therapy. Circumstances will determine how far such a program can be carried out in the individual hospital. In large hospitals, with internships of from eighteen months to two years, it is quite reasonable that a portion of this time be given to the roentgenologic department, each intern spending a while in that department as a participating assistant. Such a stay should be for not less than two months, and three would be better. The practice of assigning an intern to the x-ray department instead of a place on a rotating service should be condemned; no fellow in the roentgen department should be accepted until after having served his regular internship, and preferably after a few years of general practice. Failure to observe this precaution results in unbalanced training, which soon becomes evident in the practical work of the fellow. In some hospitals the interpretation is done at the same time during which the members of the attending staff are making their rounds, so that it is difficult for the interns to participate in the reading of the roentgen examination. In such cases it is feasible to arrange a certain hour at the close of the forenoon or at the end of the day for revision of some of the more interesting of the x-ray cases of the day. It is also possible for the staff to arrange that the roentgenologist shall give a series of systematic lectures and demonstrations covering the x-ray instruction deemed necessary. Much good will have been accomplished if the intern on leaving the hospital can carry with him a thorough appreciation of the scope and limitations of the roentgen examination in various disease conditions, its value and dangers in the control of fracture and foreign body work, and its place with radium in the treatment of many benign lesions as well as in the management of malignant disease.

# ARTIFICIAL PNEUMOTHORAX IN PULMONARY TUBERCULOSIS WITH SPECIAL REFERENCE TO THE CAUTERIZATION OF ADHESIONS\*

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For the benefit of those present who may question the advisability of bringing a surgical subject before the section on general medicine, I should like to call attention to the fact that many of the surgical procedures now employed in the treatment of intrathoracic conditions were first conceived and put into practice by internists or phthisiologists. The intrapleural cauterization of adhesions was first practiced in 1913 by Jacobaeus, the ingenuous, professor of medicine at the University of Stockholm. Because of this unique invasion of the field of surgery by an internist, Professor Jacobaeus was made an honorary fellow of the American College of Surgeons at its annual meeting in 1921.

While this subject is purely surgical, the patient suffering from pulmonary tuberculosis never ceases to be a medical problem and as a rule surgery, if wisely employed, is sandwiched in between long periods of routine medical management, preferably institutional management. The latter statement is deemed justifiable because these cases usually require the closest observation and the most discriminating diagnostic scrutiny in order to avoid hasty or unwarranted conclusions. There is such a wide variation in many cases between the degree of anatomic involvement and the symptom complex, the prognosis is often exceedingly difficult and can be properly made only after long continued observation and the repeated application of the various diagnostic methods, including serial x-ray studies. In the ultimate, the value of such a diagnostic survey will vary with the experience and judgment of the phthisiologist.

It might well be said that any surgical operation for the purpose of bringing about collapse of the lung is a mere incident in the therapeutic management of pulmonary tuberculosis and is usually an attempt to supplement the routine rest cure in bringing about additional local

rest and the closure of cavities. Since the International Congress on Tuberculosis in 1912, artificial pneumothorax has been generally accepted as the most significant advance in the treatment of pulmonary tuberculosis during the past fifty years. This method of treatment is now thoroughly understood by all members of the medical profession, but the difficulties arising through the presence of pleural adhesions are not fully appreciated. In many cases it is impossible to induce artificial pneumothorax because of obliteration of the pleural cavity by adhesions. In other cases where free pleural space is found it is so limited by adhesions that collapse is rendered incomplete and the therapeutic value of the procedure is wholly or partially counteracted. As a rule, the adhesions are found where collapse is most needed. If the adhesions are string-like or band-like and it can be determined with reasonable certainty that they do not contain lung tissue or large blood vessels, they may be successfully severed by the Jacobaeus-Unverricht method of closed pneumolysis. If the adhesions are too broad and extensive to be successfully cauterized without danger to the patient or if the band-like adhesions are found to contain lung tissue or large blood vessels, phrenicectomy combined with thoracoplasty should be considered as a means of securing the desired collapse.

The technique and the instruments employed in the cauterization of adhesions are to be described by Dr. Horace Reed in his discussion of this paper. The results of this method of treatment are clearly shown in the lantern slides which are now to be presented. In those cases where the operation proves successful, that portion of the lung held out by the adhesions and all cavities appearing in the uncollapsed lung tissue immediately undergo a certain degree of collapse and under the continuation of pneumothorax treatments, complete closure of cavities soon results. Exceptions may arise in cases where there is marked fibrosis with dense cavity walls, but the latter constitute such a small percentage of cases, it invariably seems wise to give the patient the benefit of the doubt.

The accompanying pictures (Figures 1 and 2) chosen from those cases illustrated by the slides will furnish an adequate idea of the prompt results obtained.

As stated above, this operation is in-

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licated in pulmonary tuberculosis when string or band-like adhesions interfere with collapse of the diseased lung, especially when on account of imperfect collapse cavities remain open and where other conditions are such that successful cauterization of the adhesions will improve the patient's chances for recovery. It is also indicated in cases where satisfactory collapse has been accomplished in spite of adhesions yet requiring the maintenance of intrathoracic pressure sufficiently high to cause uncomfortable sensations in the thorax and to justify the fear of lung rupture through the constant tension on adhesions. In these cases, diaphragmatic involvement through adhesions or downward pressure associated with digestive disturbances may be sufficient to indicate cauterization.

Contraindications are few, in fact they are about the same as the contraindications for artificial pneumothorax and in the light of accumulated experience, the latter have almost reached the vanishing point. However, acute pleural exudate or acute pyothorax should be considered as contraindications. The presence of a chronic serous exudate does not constitute a contraindication but the fluid should be aspirated before cauterization is employed. Chronic purulent exudate should have preliminary treatment with oil of gomenol and then aspirated before cauterization. Our series of successfully treated cases include these two types.

Among the postoperative complications may be mentioned the following. Simple serous exudate in approximately fifty per cent of the cases. In our experience this complication has been no more troublesome than in the ordinary course of artificial pneumothorax. Purulent tuberculous exudate may occur in ten to twenty per cent of the cases. Purulent nontuberculous exudate may result but evidently it is very infrequent. Either the purulent tuberculous or purulent nontuberculous exudate may occur when bronchial fistula results. Hemorrhage, which may prove to be a serious complication, is not likely to occur when the cases are wisely chosen. Severe febrile reactions are apparently infrequent but may follow extensive cauterization. Subcutaneous emphysema occurred in two of our cases, however, we feel that this can usually be obviated by including the deep fascia in the suture employed to close the small openings resulting from the introduction of instruments.

In closing this discussion, may I say that every case of moderately advanced and even every case of far advanced pulmonary tuberculosis should have a thorough diagnostic study, plus a period of observation with a view of determining whether or not artificial pneumothorax is indicated. If artificial pneumothorax is employed and adequate collapse is interfered with by adhesions found to be suitable for cauterization, this operation



FIGURE NO. 1.

Advanced Pulmonary Tuberculosis with a large Cavity in the upper Lobe of the right Lung.  
Artificial Pneumothorax unsuccessful because of Adhesions.



FIGURE NO. 2.

This represents a case of advanced bilateral Pulmonary Tuberculosis complicated by tuberculous Laryngitis. Under the influence of artificial Pneumothorax on the right with reflected sunlight for the laryngeal condition, there was marked improvement.

should be strongly urged. In case artificial pneumothorax is impossible because of adhesions, or in case the adhesions are of such a nature that cauterization is contraindicated, phrenicectomy and thoracoplasty should be considered. The scope of these surgical procedures is so far reaching in this disease, which is essentially a medical one, I feel that every general practitioner should be keenly alert to the therapeutic possibilities and untiring in his effort to give his patient the best possible chance for recovery.

In the first picture collapse of the right lung is almost complete but the large cavity immediately to the right of the sternum is held open by a number of string-like adhesions corresponding to the location of the arrows.

The second picture was made only a few days after cauterization of adhesions. The cavity is almost completely closed and the patient's chances for recovery greatly improved.

The first picture was made after the patient had received the maximum benefit from artificial pneumothorax. In spite of a fair degree of collapse of the right lung, cavities in the upper lobe are held open by band-like adhesions.

The second picture was made one week after cauterization of the adhesions. The upper lobe is now completely collapsed and the cavities have disappeared. The

lower lobe is attached to the diaphragm, thus inhibiting collapse at the base. However, since the lower lobe is fairly free from pathology, this will not interfere with healing.

The lower arrow indicates the presence of a moderate amount of fluid. This often follows the operation.

DISCUSSION: *Horace Reed, M.D., Oklahoma City.*

The selection of cases suitable for the Jacobaeus operation is a responsibility resting entirely on the phthysiologist. The principal indication is an adhesion which by its traction on the lung prevents the collapse of a cavity under artificial pneumothorax. Whether such an adhesion can be severed safely is a problem for the surgeon to decide.

The operation is minor in magnitude, and the general physical condition of the patient is a question of little importance. The instruments employed are introduced into the pleural cavity between the ribs. Local anesthetics of novocain with adrenalin is all that is required for the operation. Skin incisions, 1 cm. in length, are closed with a single suture of fine catgut which should reach down to, and include the puncture opening in the deep fascia. If the fascia is not thus included, an emphysema may develop over a considerable area in the region of the wound. The



side of the chest in which adhesions have been severed is fixed by means of adhesive strappings, and the patient is urged to avoid, if possible, coughing, sneezing, or laughing for three or four days.

If a surgeon has had considerable experience in the use of the modern cystoscope, he will have but little difficulty in the manipulation of the instruments under vision within the chest. If he has not had this experience, he should practice on an artificial chest cavity constructed so as to resemble the pleural cavity with ribbons and strings for adhesions. In determining the location of adhesions, particularly the point of attachment to the chest wall, good stereoscopic films are essential. These should be studied just before the operation in order that the introduction at the point of attachment of the adhesion may be avoided.

The patient is placed on the operating table lying on the side opposite to the adhesions. A small but firm pillow is placed under the chest. The preparation area should include practically all the surface of the chest covering the affected lung. The thoracoscope is introduced preferably from behind. It must, of course, be in a free air space above the level of any free fluid in the cavity. Inspection, through the thoracoscope, of the cavity and the location of all adhesions, is done before introducing the cautery.

Not all adhesions can be safely cauterized. Some contain large blood vessels, while the lung cavity may project deeply into others. The point most desirable for the introduction of the cautery is determined after a thorough inspection has been completed. After its introduction the point is directed to each adhesion in turn under the guidance of vision. Each adhesion is again inspected, using the cold cautery point as a probe before turning on the current. If the cautery is too close to the parietal wall, there will be pain, and the danger of bleeding is greater. If too near the visceral attachment, a cavity may be opened. If there are no visible blood vessels, the adhesion should be severed on the parietal side of its mid point. Bleeding, if any, comes from the parietal end of the adhesion. We have had one patient with apical cavity in whom the adhesion was attached to a large vein at the level of the first rib. Obviously this was not cauterized. Later a thoracoplasty in which segments of the first to the

fourth ribs inclusive were removed, brought about favorable results.

In burning large adhesions heat radiation may become painful. The current should be turned off, and filtered air allowed to enter through cannula provided for this purpose. This procedure at the same time gets rid of smoke which sometimes gets so thick as to interfere with good vision. Flabby adhesions, and such as are not interfering with the object of pneumothorax treatment, do not need to be disturbed.

We keep these patients in bed under sedation for three or four days before returning them to the sanatorium. There is usually an accumulation of fluid which is demonstrable for a few days following operation. Thus far we have had no bleeding of consequence, and no cases of infection of the pleural cavity as a result of operation. Like all other procedures which are employed in pulmonary tuberculosis, cauterization of adhesions does not of itself produce a cure. When definitely indicated, however, the operation does bring about changes which makes favorable progress possible, and often very rapid.

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#### PAINFUL ANEURYSMS OF AORTIC ARCH: RELIEF BY PARAVERTEBRAL INJECTIONS OF PROCAINE AND ALCOHOL

James C. White, Boston (Journal A. M. A., July 2, 1932), reports three cases in which successful relief of pain was obtained in advanced aneurysms of the aortic arch. He states that the intense suffering that may occur in this condition, as well as the cardiac pain of angina pectoris, can be relieved by paravertebral injections of procaine or alcohol. Procaine injection is of diagnostic value in determining which communicant rami transmit the painful impulses to the spinal cord. It may give relief over prolonged periods. Alcohol, when accurately injected, causes permanent destruction of the sympathetic rami. The author emphasizes the fact that the paravertebral injection of alcohol is a poor substitute for sympathetic ganglionectomy in any patient who is a reasonably poor operative risk, on account of the technical difficulty of injecting the alcohol with sufficient accuracy to be certain of destroying the ganglions or their communicant rami. However, in cases in which there are rapidly enlarging aneurysms, the dangers of cardiac decompensation, respiratory obstruction, or rupture of the aneurysm make a radical operation on the stellate and second dorsal ganglions quite out of the question. In these, however, paravertebral injection can be done with reasonable safety and a good chance of lasting relief of the chief complaint—pain. While actual prolongation of life is not to be expected from the relief of pain, it may be brought about indirectly by permitting the exhausted sufferer to rest and sleep in relative comfort.

## BLOOD STUDY AS AN AID IN THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF PULMON- ARY TUBERCULOSIS

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The blood picture in acute infectious diseases is familiar to all of us. In acute cases, both surgical and medical, we never fail to have proper blood work done, but seldom do we ever consider the blood in some of our chronic diseases; particularly has this been true of pulmonary tuberculosis.

Within the last few years, however, many interesting developments have arisen and among these developments are some important facts, which in the future will clear up some of our tubercular problems just as much so possibly as the X-ray has aided in the past.

Back as far as 1896, Holmes discovered that there was a definite relation existing between the leucocytes and a patient's resistance to tuberculosis. In 1900, it was discovered by Archard and Loeper that the monocytes were increased in human tuberculosis. Later on such eminent men as Schilling, Ponder, Piney, Arneth, Cunningham, Flynn, Medlar, Sabin and others have contributed many important facts in the blood picture of the tubercular. Cunningham and Sabin worked for years on the mononuclear leucocyte which they found to be increased in active tuberculosis. They found that these mononuclears had their origin in the reticular cells of the spleen and bone marrow and that these cells rushed to any active tuberculous process. Later on in 1927, Medlar and his co-workers found that this mononuclear played the chief role in the formation of the primary epitheloid tubercle. They also found that the neutrophiles came to the scene of action after the mononuclears had undergone necrosis, following an unsuccessful attempt to combat the infection. These neutrophiles, through their proteolytic enzyme tend to liquify any necrotic material which gives rise to suppuration. If the neutrophiles are killed incomplete digestion of the dead connective tissue ensues and typical caseous material results.

These same men found that the lymphocytes are the cells principally concerned

with healing tuberculosis. If the healing occurs early with the destruction of the tubercular bacilli the lymphocytes alone take part. If, however, healing occurs later after the suppuration and caseation have taken place, the lymphocytes are aided materially by the monocytes in the healing process. (Flynn)<sup>1</sup>.

In the study of pulmonary tuberculosis, it has been noted for several years that the cases with high lymphocyte counts more frequently recovered than the ones with low lymphocytic counts. It has also been noted that active cases have an increase in the mononuclears and as a general rule the higher percentage of mononuclears the poorer the prognosis. When there is a gradual increase of lymphocytes and gradual decrease in the monocytes, one can usually wager that there is an improved pulmonary condition. On the other hand if the monocytes are increasing and the lymphocytes are decreasing you are safe in telling the patient there is a spreading of the infection. Another factor, which has been definitely proved, is that an increase in neutrophiles with a decrease of lymphocytes points to an extension of the pulmonary involvement. On the other hand when the neutrophiles are decreasing and lymphocytes increasing favorable progress is being made by the patient.

After years of experimental study, Sabin, Cunningham, Medlar and Castlin have interpreted leucocytic pictures in active tuberculosis as follows:

1. A high monocyte percentage when accompanied by normal or a low lymphocytic percentage, suggest an active proliferative lesion.
2. A high neutrophilic percentage suggests an exudative lesion.
3. A high lymphocytosis usually means a healing lesion.

Arneth, Shilling and others have laid great stress on the number of segments or nuclei found in the neutrophiles.

After years of study they noticed that their active tubercular patients had fewer segments in their neutrophiles than normal individuals. In order to arrive at some conclusion, they divided the neutrophiles into those having one, two, three, four and five segments respectively. They found that the more active and toxic the



patient, the more neutrophiles had one and two segment nuclei. As the patient's condition improved, the segments increased. It might be well to state here that there is little value in one blood examination, but is one of much importance when done frequently at regular intervals.

During the past two years a great deal has been written about blood sedimentation tests in tuberculosis. This test is most accurately described by Dr. Cutler<sup>3</sup> in the American Review of Tuberculosis, (March, 1930). The Cutler tubes and graphic charts are used exclusively in this work. Five c.c. of blood is drawn and mixed with  $\frac{1}{2}$  c.c. of a 3% solution of sodium citrate. It is then placed in the graduated sedimentation tube where the cells are permitted to sediment. As these cells sink to the bottom of the tube, it is easy to read on the scale of the tube the amount of clear serum above. The tube is read every five minutes and a line is drawn on the chart representing the rapidity of the fall. The more rapidly sedimentation takes place, the more active and toxic the patient. Dr. Cutler states that the sedimentation test is the most valuable single means of estimating activity in pulmonary tuberculosis. He believes it to have an accuracy of at least 94%. It is of inestimable value in completing a diagnosis of pulmonary tuberculosis in that it measures the constitutional disturbance that the disease is producing.

In our experience, in a limited practice we have found blood study to measure the activity of our tubercular patients as accurately as the stethoscope and the X-ray. We believe it to be of real value in the routine practice of diagnosing tuberculosis. Many noted tubercular men of today think it is just as important as the stethoscope and X-ray and physical examination.

To sum up, we believe that thorough physical examination is imperative at regular intervals in all cases of pulmonary tuberculosis, that the blood studies just described are not by any means specific tests for tuberculosis but rather an adjunct to the other examinations, and is a reliable factor in rendering a prognosis, and an index as to the response to treatment.

We further believe that the case of active pulmonary tuberculosis which is improving will have a gradual rising lymphocytic count, a gradual lowering mono-

cytic count, his ratio between the lymphocytes and the neutrophils will be gradually decreasing, his neutrophils will be gradually taking on more segments, and his sedimentation time will gradually lengthen. We furthermore believe that the physician is losing one of his most valuable prognostic factors, and guides to therapy in the treatment of an active pulmonary tubercular, when he fails to keep a constant check upon the patient's blood picture and sedimentation time. Again we should like to insist that a single blood study is usually worthless, but to be of value should be done weekly, or at regular intervals—say with the monthly check-up examination.

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#### RESULTS IN CHOLECYSTECTOMY, WITH ESPECIAL REFERENCE TO SYMPTOMATOLOGY AND DIAGNOSIS OF CHOLECYSTITIS

M. F. Dwyer and G. A. Dowling, Seattle (Journal A. M. A., Feb. 27, 1932), believe that chronic cholecystitis is the most frequent cause of gastric symptoms. The diagnosis of this condition by the correlation of clinical, roentgenologic and laboratory observations has reached a high degree of accuracy. Nearly one half (42 per cent) of their patients receiving a diagnosis of chronic disease of the gallbladder are considered surgical patients at the time the diagnosis is made. That the removal of the gallbladder of these patients is a satisfactory procedure is manifested by the fact that 79.7 per cent state they consider the operation a cure for the symptoms for which they sought relief. The avoidance of certain foods is a common complaint of patients with diseases of the biliary tract. Sixty-eight per cent of the patients in the authors' series stated that after the removal of the gallbladder they could eat without discomfort certain foods which before the operation caused them great distress. Symptoms of dyspepsia, especially gas and belching were either entirely relieved or greatly benefited in 80.3 per cent of the cases in which operation was performed. The surgeon should not be hasty in deciding against removal of the gallbladder because of its normal external appearance if he knows that disease of the gallbladder was diagnosed only after careful clinical, roentgenologic and laboratory examinations. Lack of the appearance of gross pathologic changes of the gallbladder in situ fails to outweigh careful clinical and laboratory deductions, and failure to remove the gallbladder in such instances is generally followed by a combination of the symptoms for which relief was sought.

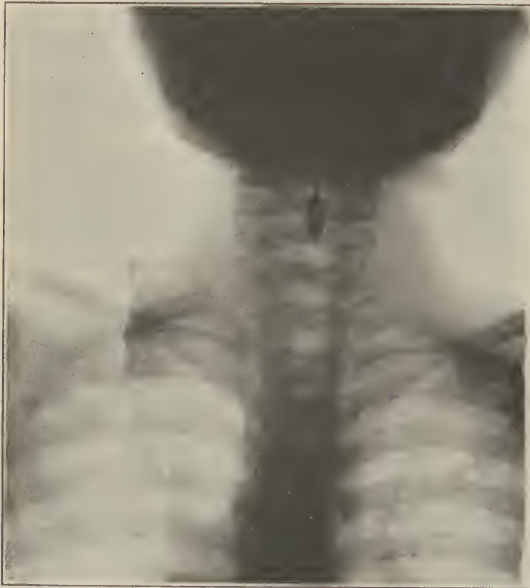
## FOREIGN BODY IN LARYNX—CASE REPORT

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An Indian child, female aged 9 years, was referred to the clinic recently with a history of foreign body in lung.

Due to parents being unable to converse in English, no history was obtained. The attending physician stated the child had aspirated a foreign body about ten hours previously. When examined the child was having some difficulty in breathing, wheezing type of respiration was noticed with marked inspiratory indrawing of the supra-sternal notch.



Radiological examination disclosed the foreign body (large headed pin) fixed in the larynx, point up.

Direct laryngoscopy was undertaken without anesthesia, the large head of the pin could be seen apparently fixed between the cords, the shaft could not be seen. During the procedure the child struggled violently and the object disappeared from view. Breathing became better so a light general ether anaesthesia was decided upon.

Bronchoscopy disclosed the foreign body now lying in right stem bronchus, point up. The pin was removed by the point sheath method.

This demonstrates the type of case in

which one should be prepared to do bronchoscopy, esophagoscopy and tracheotomy if necessary, and also to avoid the error of holding the patient up by the heels, no doubt if practiced in this case would have proven fatal, asphyxia resulting from foreign body becoming firmly lodged in the glottis.

## AGE FACTOR IN ACTIVE IMMUNIZATION OF INFANTS AGAINST DIPHTHERIA

Julius Blum, New York (Journal A. M. A., May 7, 1932), undertook an investigation to determine the proper age when active immunization of infants against diphtheria should be instituted. An exceptional opportunity was afforded to carry out this work at the Home of Hebrew Infants, where the children are under observation for three or four years and can be repeatedly tested. For the past three years, on admission to the institution, all children, irrespective of age, and without a preliminary Schick test, were given three injections, one week apart, of toxin-antitoxin in 1 cc. amounts. Tests were performed at frequent intervals, varying from six months to three years after immunization, to see whether the reaction remained negative or positive. A negative reaction was evidence of successful immunization because at the close of observation the minimum age of the children was 15 months, at which time, one would expect from 80 to 90 per cent of them to have lost their inherited passive immunity. A positive Schick test was evidence of a failure on the part of the toxin-antitoxin to immunize because in cases in which inoculation has been done when the test is positive, immunization has been successful in about 95 per cent of cases at the institution. It was noted that the response to active immunization with toxin-antitoxin was least from birth to 3 months of age (about one-third failures), and greatest from 2 to 4 years of age (about 5 per cent failures). Of infants under 9 months of age, from one fourth to one third failed to respond to active immunization. The tissues of the infant respond best to active immunizing measures after the passive immunity inherited from the mother is lost. Infants under 9 months of age should not receive toxin-antitoxin without a preliminary Schick test. As a public health measure, it may be advisable to provide active immunization for infants from 6 to 9 months of age, if they cannot be inoculated at another time. All children should be given the Schick test from three to six months after active immunization. This precaution is often neglected. Only 2 of the 198 individuals who died from diphtheria in New York City in 1930 had received protective immunization. The reduction in mortality from diphtheria in the large cities of the United States in 1930 compared to that of five years ago is more than 50 per cent. The authors believe it is quite possible that the intensive campaign of active immunization in New York City during the past few years has been an important factor in the lessening of the incidence of the disease by about 70 per cent.



## A BOTANICAL AND POLLEN SURVEY OF TULSA COUNTY AND SURROUNDING TERRITORY\*

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The results of the study of the role played by pollen in the causation of hay-fever and asthma is now occupying an important part in the study of disease in general. This is in part because of the marked variability of plant life in different localities and the resultant diversified etiological factors. This later statement is borne out by such studies made in Abilene, Texas by Sellers and Adamson,<sup>1</sup> in which they emphasized the importance of the chenopodiales, (lamb's quarter, Russian thistle, spiny amaranth, pigweed, carelessweed, and western water hemp) as causes of summer and fall hay-fever and the relative unimportance of the rag-weed, the common cause of fall hay-fever elsewhere. There are other striking examples such as the role played by the pollen of mountain cedar,<sup>2</sup> which pollinates from December to February in central and eastern Texas.

This paper reports an effort to determine the pollen content of the air and the pollination period of the seasonal hay-fever producing plants in Okmulgee, Henryetta, Muskogee and Tulsa, and a detailed botanical survey of the trees in Tulsa county. The intensive study of the tree flora warrants a detailed account of our findings.

Briefly, the method for collection of pollen was as follows: A slide covered with a thin layer of vaseline was exposed twenty-four hours every day (exceptions, noted above) at each station. The slides were protected from rain by box-like shelters with the ends of the box removed.

The pollen counts are made by examining under the microscope an area of 1.8 square centimeters of the slide. This method is accurate from a practical standpoint and accepted as a standard by Durham and other authorities.

With the exception of sporadic cases of hay-fever in the gardener or florist, pollen must meet certain requirements in order to be incriminated as causes of allergic symptoms. Thommen<sup>3</sup> has advanced cer-

tain postulates which must be fulfilled "The pollen must contain an excitant of hay-fever; it must be wind-borne; it must be produced in sufficiently large quantities; it must be sufficiently buoyant to be carried considerable distances and the plant producing the pollen must be widely and abundantly distributed."

Among many species we feel that the pollen of the following trees complies with the postulates as causes of spring hay-fever; maples, elms, poplars, oaks and possibly hackberry and pecan.

### THE TREES

The maple tree (*Acer saccharinum*) was the first to pollinate, starting February 5th and lasting until February 27th. The first of March marked the appearance of the elm bloom. Among the four common spring pollinating species the American elm (*Ulmus Americana*) predominated although there is much Chinese elm (*Ulmus pumela*) in the city of Tulsa. Two other species grow here, *Ulmus fulva* and *Ulmus alata*. The elm season terminated about March 30th.

The importance of elm pollen as a complicating factor in hay-fever has been stressed by Black and Durham<sup>4</sup>. I believe, as they do, the importance of this tree is underestimated. In addition to the species observed in the spring they observed two elms, the red and scrub trees (*Ulmus serotina* and *Ulmus crassifolia*) which pollinate profusely in September. The latter is in this state, but does not grow in Tulsa county. We observed a few elm pollen granules on the slides exposed in Henryetta during September.

Spicewood pollinates the last two weeks in March but is not a significant factor.

Among the most profusely air borne pollinating trees are the pines. Pollination of these trees has been observed as early as March 1st and as late as June 15th. Fortunately, with the exception of an ally of the pine, the mountain cedar, (*Juniperus sabinoides*) it does not contain an excitant of hay-fever.

Among the poplars, there were four species (*Populus deltoides*, *Populus italica nigra*, *Populus sargentii*, and *Populus alba*) observed pollinating. The pollen appeared March 27th and continued for more than two weeks. So thickly planted in the city, they are obviously a definite factor.

During the first two weeks in April,

\*Read before Annual Session Oklahoma State Medical Society, Tulsa, May 26, 1932.

Box elder, a member of the maple group, blooms. It is relatively insignificant as a hay-fever producing factor in Tulsa.

Three species of ash (*fraxinus Americana*, *fraxinus Pennsylvanica* and *fraxinus nigra*) pollinated more than two weeks, beginning March 27th. About the same time prickly ash (*xanthoxylum clove derculis*) bloomed, but the pollen of these trees are probably not factors, although in Missouri they are definitely important.

The enormous numbers of hackberry (*celtis Mississippinis* and *celtis occidentalis*) trees in Tulsa county lead us to believe that the pollen of these trees may be a factor. It is a close relative of the elm, consequently it is a good pollination and the pollen is buoyant. Thommen states that it pollinates in May. We concluded that his observations were made in New York. Here, the hackberry pollinates from April 4th until the 18th.

Following the pollination of hackberry came the black haw (*viburnum rufidulum*) making its appearance April 8th and extending its pollinating period to the 25th of April. Then came the hickory and pecan group. There are three species of hickories (*carya cordiformis*, *carya alba*, *carya buckley*) observed here, in addition to the pecan (*carya pecan*) trees.

The first three mentioned of the hickory group pollinates between April 18th and May 10th. It is surprising to note that pecan continued to pollinate until as late as June in the second week.

There were ten varieties of oaks observed in Tulsa county. Chief among these are the post oak (*quercus stallata*) black oak (*quercus velutina*), black jack oak (*quercus marilandica*), red oak (*quercus rubra*), bur oak (*quercus macrocarpa*), chinquapin oak (*quercus muhlenbergii*), and the pine oak (*quercus palustris*). Their periods of pollination extend from the 14th of April until the 5th day of May. These trees exceeded by far the number of any other genera.

Along the creek banks were observed the willow (*xalis nigra*) which bloomed from April 28th to May 19th.

The walnuts (*Juglans nigra*) are in rather insignificant numbers pollinating between April 28th to May 9th. The tree of heaven (*arlantus altissima*) began pollinating as late as May 12th and continued for fourteen days.

It is to be noted that the slides were not placed for exposure before the 19th of March in Muskogee, Okmulgee and Henryetta. Consequently we have no data on the importance of maple, or the elms previous to that time. However, it is thought that the pollination periods of both maples and elms approximate the dates noted above on the Tulsa botanical survey. In Muskogee and Henryetta the elms pollinate until the 30th of March and the 5th of April respectively.

The pines pollinated from March the 19th until the first week in June. The pollen of poplars was not noted in Muskogee as early as the 23rd of March, while in Henryetta they were observed first on the 29th of March. They disappeared from the slides on the 10th of April in Muskogee but continued to appear until the 19th in Henryetta. The oaks appeared at the same time, about the 8th of April. In Muskogee they continued to pollinate until the 17th of May while in Henryetta no oak pollen was seen on the slides after the 12th. What has been said about the hickory, walnut and pecan groups here applies to the pollinating period in Muskogee and Henryetta.

The willows and walnuts began to pollinate about the 27th of April and extend through to the 16th and 9th of May, respectively.

Balyeat<sup>5</sup> has stated that the period of grass season begins about the 15th of May, particularly with the pollination of Bermuda Grass. Grass pollen was noted on the slides exposed as early as the first week of May. Although we have not made a detailed botanical survey of the grasses of Tulsa county, a survey is being made this year. However, we have observed blue grass (*poa pretensis*) and several other grasses of less importance pollinating the first week of May. There were also three varieties of plantain (*plantago major*, *plantago aristato*, *plantago purshii*) and several species of dock (*Rumex verticillatus*, *Rumex crispus*). Bermuda grass continued to pollinate through September. Among the amaranths there are four varieties observed here (*amaranthus spinosus*, *amaranthus retroflexus* and *amaranthus palmeri*), and the close relative western water hemp (*chenopodium album*) predominates. Although the chenopods and amaranths begin to pollinate profusely in the third week of June, we have observed pollen on the slides as



early as the first week in June. These continued to pollinate through the third week of September. From a botanical observation, we have noted the paucity of western water hemp in Tulsa county. The pollen of the chenopods and amaranths are so similar that we feel a differentiation of these two genera cannot be made.

Rag-weed pollen was observed in Muskogee as early as the 10th of August, in Tulsa on the 11th, in Okmulgee on the 12th, and in Henryetta on the 20th. Our observations extend only until the 30th of September but it is known that rag-weed pollinates in Oklahoma until the middle of October.

Charts one and two show the results of the botanical survey made here in Tulsa county. Charts three and four show the periods during which the important trees and plants pollinate in Muskogee. Charts five and six represent the pollinating period of the trees and plants in Henryetta. Charts seven and eight show the relative abundance of pollen on the slides exposed in Okmulgee from the 19th of March until the 30th of September. It has been noted above from the botanical survey that elm trees pollinated throughout the month of March. You will note a marked peak during the last half of the third week and during the first half of the fourth week of March.

Then a second peak represents the pollen of ash trees during the last week in March. Box elders, although relatively small in numbers, pollinate from the 29th of March until the middle of the second week of April. The rather broad peak represents the poplars during the last half of the first week and the second week of April. The pines show three rather marked peaks on the 13th, 15th and 19th of April. However, pine pollen continued to be present on the slides as late as the 9th of May. Again, it is important to emphasize that pine pollen, with the one exception noted above, does not cause hay-fever because of the lack of an excitant.

The most important of all of the spring groups of trees are the oaks. You will note three peaks, the first of which is extremely high between the 18th and 22nd of April, a small peak on the 26th and the third peak between the second and fourth of May. The period of pollination extends from the second week of April until the second week of May.

The pecan and hickory groups pollinate

about the first of May. By correlating the botanical survey we know that the white, black and bitter nut hickory pollinate for a very short period during the first week of May. Therefore, the peaks after that time is due primarily to the pecan species of hickory. There was a marked peak even as late as the 26th of May and pecan pollen was observed until the second day of June.

We believe that the peaks of the grasses were due almost entirely to the Bermuda grass. There are numerous peaks appearing throughout May, June, July, August and September. However, the greatest pollen concentration was during the last half of the second week, the third week and the fourth week of May but relatively high concentration appeared throughout June and July. The curve representing the chenopod, and amaranth groups showed numerous peaks throughout June, July, August and September. The most pollen observed of any species is that of the rag-weed. The rag-weed pollen was seen first about the 17th of August with the maximum concentration on the 13th, 14th, 19th and 20th of September.

Chart number 9 represents comparative study of the pollen peaks observed in Wichita, Oklahoma City, Henryetta and Muskogee.

O. C. Durham in Chicago, forwarded to me results of the study made on the slides exposed in Wichita and Oklahoma City. I think that it is of interest to note that the pollen concentration in Henryetta and Muskogee was greater than in either Oklahoma City or Wichita. The first high peak in these four cities was observed in Muskogee between August 29th and September 1st. The second peak in Muskogee coincides with the first peak in Henryetta. It is also interesting to note that the last large peak observed in Henryetta and Oklahoma City coincides with the peaks of lesser height in Wichita and Muskogee. The slides exposed in Wichita and Oklahoma City demonstrated the continuation of pollination through the first two weeks in October.

#### COMMENT

This study emphasizes the need of further detailed pollen and botanical studies in order to correlate pollen as the causes of seasonal hay-fever and asthma. We hope that this information will aid in acquainting those who have little or no knowledge of the principal wind-pollinated

plants in the respective territories. We propose this year to make a more detailed botanical and pollen study of the sorrels, docks, plantains and unusual grasses in Tulsa county.

I want to express my gratitude to Dr. Glismann of Okmulgee, to Dr. Campbell of Muskogee and Dr. Bollinger of Henryetta for their aid in this study.

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#### ALLERGY AS IT APPEARS IN THE UNITED STATES ARMY

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Allergy as it appears in the United States Army presents a somewhat different picture than it does in the average allergy clinic in private life. There are two principal reasons for this difference.

The regulations governing the admission of both officers and enlisted men into the service are very strict with regard to the two main allergic manifestations—asthma and hay-fever. No cadet is admitted to West Point, no officer nor enlisted man is admitted directly into the service with a history of either asthma or hay-fever. This regulation affects the clientele of an army allergic clinic. The large majority of patients are the wives and children of officers and enlisted men, with an occasional other dependent such as a father, mother, etc. A few officers and enlisted men develop some allergic condition after they have been accepted into the service, but well over 75 percent of our cases are women and children.

The other reason for the different picture is the more or less frequent changes in station of army personnel—both as regards the allergist and the allergic sufferer. The allergist has an opportunity to observe and study allergic conditions as met with in all parts of the United States as well as in frigid Alaska and the tropical and semi-tropical island possessions. The allergic sufferer has an opportunity to escape offending contacts by a change of station as well as to pick up new offending contacts upon arrival at his new station. The picture is constantly changing and relieves somewhat the monotony of a cut and dried series of cases such as often develop in an allergic clinic.

Before attempting to describe briefly the methods of diagnosis and treatment as carried out at our allergy clinic at the Station Hospital, Fort Sam Houston, Texas, I desire to go into some of the fundamentals of allergy for the benefit of those who have not made an intensive study of this phenomenon.

The term "allergy" was first used by von Pirquet. Literally, the term means "altered reactivity." However, in recent years the term has come into more or less



general use by the medical profession as a synonym of hypersensitiveness, even though hypersensitiveness does not actually signify an altered reactivity. Because of this accepted but etymologically incorrect use of this word, we speak of an allergy as a hypersensitiveness and of an allergic condition as a condition of hypersensitiveness.

Hypersensitiveness in the human being manifests itself in a number of ways. Some are relatively common and others relatively rare. The most common manifestations of hypersensitiveness are bronchial asthma and the so-called hay-fevers. The less common are urticaria, angioneurotic edema and the various other nerve, gastrointestinal and skin manifestations.

Hypersensitiveness, in an immunologic sense, is specific. Its mechanism is as follows: It consists of two substances that react with each other specifically. The two substances are:

1. The excitant or active agent, such as pollen, proteins, foods, danders, etc.
2. The other substance, which is present in the tissues of the body.

In the mechanism, the active substance usually has no direct effect on the tissues. Only when the second substance is present does the first substance produce its injurious effect. Example: pollens are innocuous to the large percentage of persons. The active substance of poison ivy does not produce any symptoms in persons under three years of age, and only 60 percent of persons are affected at all by this substance.

The best-understood form of hypersensitiveness is anaphylaxis. In the mechanism of anaphylaxis, we have:

1. The antigen, usually a protein.
2. The antibody—the precipitin.

It takes about six hours to make a guinea pig passively sensitive to an antigen. This latent period means that the antibodies have to be taken up by the tissues and become incorporated with them before the reaction of the antigen, which is later injected, is injurious and then they cannot be washed out. In guinea pig experiments, 98 percent of the blood was replaced with non-antigen blood, but the antibodies still remained in the tissues.

Muscular tissue is the only tissue irritated in anaphylaxis. In the guinea pig, the bronchial muscles are irritated to tetanic contractions in anaphylaxis. This causes an interruption of respiration, and the guinea pig dies of asphyxiation. A maximal distention of the lungs is always found after the death of the guinea pig from anaphylaxis. This is not the case with rabbits and dogs. In rabbits the pulmonary arterioles are physiologically completely obstructed. In this case it is the medial muscles of the arterioles that contract. In the dog, there is no effect on the bronchial muscles nor the median muscles of the arterioles. The anaphylactic reaction occurs in the liver. It becomes acutely congested, due to a strictly local reaction on the liver tissue.

Anaphylactic pathology differs widely in the different animals. The characteristic pathology of hypersensitiveness in the human being is edema, the cause of which is unknown. Urticaria is an edema; in hay-fever, there is an edema of the mucous membranes; in asthma, there is an edema of the bronchial tree.

Not every normal human skin is susceptible to the skin reactions for the hay-fever and asthma (atopic group) tests. Only about 85 percent are receptive; in other words, 15 percent of skins will not show positive reactions to the tests, even though they may be sensitive to the active principles of the extract.

There is a period (about 2 hours) after a skin test that the same skin area will not be sensitive to the same extract; but it will be sensitive to any other extract to the active principle of which the patient is sensitive. This shows that the skin test is specific.

Regarding the etiology of allergic conditions, we believe in three main classes:

1. Inhalation group.
2. Ingestion group.
3. Absorption group.

*Inhalation Group:* This group includes all substances which may be taken into the body by the air route. The most common offenders of this class are such things as danders, pollens, sachets, etc.

*Ingestion Group:* This group includes all substances which may be taken into the body by the alimentary route. The most common offenders are certain foods and drugs.

*Absorption Group:* This group includes

absorption from all foci such as nose and throat, intestinal tract, lungs, prostate, tubes and ovaries, etc.

There are certain predisposing factors that enter largely into the etiology of most allergic conditions. Most any underlying disease which reduces the 100 per cent efficiency of the human entity can be considered as a predisposing factor in allergic conditions the same as it can for infectious and most other diseases. Some of these diseases are: acute and chronic bronchitis, emphysema, tuberculosis, cardiorenal diseases, thymic enlargement, reflex bronchospasm, etc.

We have found in our clinic that a large majority of our asthmatics have an underlying focus of infection which in many cases is the only cause for the asthmatic condition. This is particularly true with children. Time after time we have had children brought to us in the throes of severe asthmatic attacks which have cleared up immediately upon the removal of bad tonsils, adenoids, or the clearing up of infected antra. Other asthmatics will present some predisposing factor as enumerated above coupled with a sensitivity to pollen, animal emanations, etc., or to some food product, or to both. In fact, we find that no two cases of asthma are ever exactly alike and that each case presents an interesting puzzle all its own.

With regard to our hay-fever cases, we find that the vast majority of them are caused primarily by pollen sensitivity. Some of them will have a focus of infection in addition to their pollen sensitivity. Others, the perennial types, will show a sensitivity to such things as danders, orris root, etc., either with or without a pollen sensitivity. We find that food sensitivities play little part in hay-fevers.

With our cases of urticaria, angioneurotic edema, gastrointestinal, and vague skin manifestations, the foods play the most important role. In this connection, we desire to go on record as stating that our experience with skin tests for foods has been decidedly disappointing. Still, when one stops to consider the method of preparation of food tests and the method of their application, it is not difficult to understand why the results are generally unsatisfactory. Most food extracts are prepared from raw foods. They are applied directly to the skin areas either by the scratch or intradermal methods which will be described later. It is beyond the

possibilities of the most imaginative or bizarre mind to imagine that these foods reach the blood stream in anywhere near the same chemical composition as they do when absorbed from the intestinal tract. Many reasons will account for the differences in chemical composition. Some of them are as follows:

A great many of our foods are cooked. This undoubtedly changes its chemistry, particularly if cooked with some other food. Practically none of our foods are eaten solely by themselves, but usually in combination with other foods. From the minute the food enters the mouth, its chemistry begins to change from the action of the various ferments, acid gastric juice, alkaline intestinal juice, bacterial action, etc. By the time food is absorbed, its chemical composition can therefore be seen to be quite different from its chemical composition as it is possible to use it in skin testing. For these reasons, we have practically abandoned skin testing for foods and rely almost exclusively on an elimination diet for our information relative to food sensitivities. The elimination diet procedure takes time and is trying on both patient and doctor. The results, however, are satisfactory and often elicit important facts on the case which cannot be obtained in any other manner.

Regarding the diagnosis of allergic conditions, one of the most important parts in the diagnosis is the case history. It is often possible, in taking a case history, to eliminate the great majority of possible causes and therefore cut down the great number of skin tests that are sometimes necessary if a careful history has not been taken.

Family history, with reference to atopic conditions in the immediate family, is imperative; the occupation and environment, both at home and place of business; dust, mattresses, pillows, stuffed furniture, talcum powder, etc., all bear an important part in the history of the allergic condition. The place of abode should be checked up carefully from the time the first symptoms of the disease started, with reference to the severity of the disease in each locality in which the patient has lived. The severity of the patient's condition in the different seasons is important.

A careful survey of the home environment in the case of children of parents whose intelligence is not up to normal should be carefully gone into. Ofttimes



such parents will answer questions simply with the idea of making a reply rather than giving accurate information.

In the history of hay-fever the season in which the symptoms appear is of great importance. As a general rule, throughout the United States, the pollen hay-fevers begin with the pollination of trees, which are usually the first to bloom in the spring. Fortunately, the number of tree cases is relatively small. This is probably due to the fact that the pollination period of the trees is comparatively short and that what is called the tolerance line is not often reached by sensitive persons before pollination of the specific tree is finished. Following the trees come the grasses. These are usually the cause of what we call early or June hay-fever. After the grasses come the flowers and weeds. The principal weed with which we are interested in this study of pollinosis is the rag weed. In this section, the carelessweed is also an important offender. Then in December comes the mountain cedar, which is also an important offender in our vicinity. The seasons of the various trees, grasses and flowers, vary of course, in different parts of the country. In this particular locality the grass is an offender for practically the entire year. The ragweed season in this vicinity is long, due to the fact that killing frosts arrive much later than they do in colder climates.

The diagnosis of allergic conditions consists, therefore, in the taking of a very careful history. A physical examination of the chest should be made, particularly in asthmatics. A complete nose and throat examination, including transillumination and X-ray of the sinuses, should be done. A dental survey, with the necessary X-rays, should be made to determine possible foci of infection in the mouth. A gastrointestinal X-ray is of great importance when there is any history of gastrointestinal trouble. A stool examination, particularly for hemolytic streptococci, is in order when the intestinal history indicates gas formation. A blood Wassermann test will often lead us in the right direction.

Two methods of applying the skin test in allergic conditions are in use:

1. The cutaneous or scratch method, of Schloss.
2. The intradermal or injection method, of Cooke.

Two forms of test proteins are in use:

1. The dry, powdered preparations, made according to the methods described by Wodehouse.
2. The fluid preparations originally used by Cooke, and now made according to the methods described by Coca and others.

Aaron Brown, in a summary of conclusions, compares the two methods, as follows, and claims that the superiority of the intradermal method over the scratch method has been shown upon the following grounds:

1. In every case known to be clinically sensitive to a protein, the intradermal test with that protein resulted positively. The scratch test with the corresponding dry preparations resulted positively in only half the cases tested. The scratch test with the fluid preparations resulted negatively in 18 percent of the cases tested.

2. The intradermal method, properly applied, is not so painful as the scratch method and the resulting markings of the skin do not persist so long after the former method.

3. Less time is required for applying the intradermal method and for obtaining the results than is needed for the scratch method.

4. The same preparation can be used for testing and for treatment when the fluid preparations are employed.

In doing the skin test, Vander Veer and Cooke have given the following significance to the cutaneous reaction:

The local reaction divides itself into three groups: (1) the immediate reaction; (2) delayed reaction; (3) negative.

The immediate reactions are marked, moderate or slight. Marked reactions are characterized by the appearance of an urticarial wheal with pseudopod projections and a surrounding zone of hyperemia, appearing in ten to fifteen minutes. Moderate reactions lack the pseudopod projections and do not form so large a wheal, but have a hyperemic zone. The slight reactions show a hyperemic zone, with little or no wheal. Slight and moderate reactions are at times obtained to extracts in a very weak solution and become marked where more concentrated solu-

tions are tried. Where reactions are slight or moderate to the concentrated extracts they are dismissed as of no clinical significance, unless they go on to develop delayed reactions and fall, then, into a different group, to be discussed later.

Marked reactions are of the greatest importance, but they, too, are occasionally false. At times one gets what we call the "splash" reaction, when the point of the needle happens to lie between two easily separated layers of the derma or epiderma, and the extract seems to splash out at once into an area with irregular edges. In such cases the wheal looks like a marked positive reaction, but it lacks the hyperemic zone. This also happens when an air bubble is introduced by mistake. Then occasionally, but not so frequently, a definite marked positive reaction is obtained, which can never be verified. These, too, must be set aside as of no clinical significance, for they could only indicate a short fleeting phase of allergy, a clinical condition of which we are not as yet cognizant.

Marked positive reactions, occurring on repeated testings, always indicate a true hypersensitiveness. This statement requires a reservation, or more truly an explanation, in order not to be misleading. Cutaneous hypersensitiveness does not necessarily indicate clinical hypersensitiveness, because, in the ordinary course of life, the allergen can never be brought in contact with the hypersensitive cells. Let me cite briefly two actual cases to illustrate the point:

The first is the case of a man 45 years old who had been troubled for five years with a very extreme degree of vasomotor rhinitis, socalled. He gave marked cutaneous, ophthalmic and nasal reactions to corn and cottonseed meal. On the strength of this reaction one might have been tempted to withdraw corn and cornmeal from his diet. But it so happened that, five years before, this man had retired to a little farm and took great pride in his chickens which he himself fed religiously, twice a day, with corn and cottonseed meal. As soon as he stopped this his vasomotor rhinitis stopped. He was able to eat corn and cornmeal, which he did freely, as a test, without the slightest trouble. An injection of extract of corn produced a constitutional reaction with coryza and cutaneous hyperemia and urticaria. This case also illustrates the dangers in the interpretation of positive reactions when applied to foods.

The other case is that of a woman 30 years of age who had never had hay-fever of the Spring type, and would have recognized it before, because she had had autumnal hay-fever for about fifteen years. The test with a timothy pollen extract in March was markedly positive. The following June she had perfectly typical, clinical hay-fever of the early type.

We now have records of several such cases, giving marked positive cutaneous reactions with negative ophthalmic reactions. Such cases we consider as potential hay-fever cases. They have no clinical symptoms because the mucous membranes have not become hypersensitive. But we have had the satisfaction of watching such cases develop clinical hay-fever at a later date, at which time the mucous membranes react positively. Aside from the inheritance factor, such an experience tends to make one feel that the constitutional reaction is developed within the body by some means, other than ordinary immunologic procedure adopted in animal anaphylaxis.

Delayed cutaneous reactions occur from 6 to 24 hours after the test, and are characterized by an area of edema and redness, usually with itching, sometimes only an inch or two in diameter, and at others extending to the elbow or even wrist, when injection is made in the upper third of the arm. Of the clinical significance of such reactions nothing definite can be said at the present time. They are usually obtained with the food extracts rather than with pollen extracts, and may occur in apparently normal individuals or in those with clinical asthma, urticaria or angioneurotic edema; but so far as we can determine, foods giving such reactions may be eaten with impunity. We have never yet been able to make and prove a diagnosis on the basis of a delayed reaction, no matter how severe.

*Negative Reactions:* At the site of the test there is no enlargement of the papule caused by the injection of the 1-50 to 1-100 cc. of the extract tested. There is no hyperemia or other evidence of cellular or vascular activity, either immediate or delayed. In general, such tests indicate absence of hypersensitiveness, at least in the skin. But in exceptional cases negative reactions occur when the clinical history is absolute and definite. We have seen a number of cases with a history of acute and severe abdominal pain, vomiting and diarrhoea, occurring about twen-



ty minutes after the ingestion of clam. It has occurred not once but several times. The cutaneous reaction is always negative. Such cases can readily be explained on the basis of a localization of the hypersensitive area to the gastric or upper intestinal tract. We have observed this localization of hypersensitiveness to the nasal mucous membrane in a very few cases of vasomotor rhinitis, and not infrequently in hay-fever the degree of hypersensitiveness is much greater in one eye than in the other.

Just as we see local reactions of the immediate and delayed type, so also do we see immediate and delayed clinical reactions. By delayed clinical reactions I mean a reaction occurring 24 hours to five days after the ingestion of a substance. Immediate local reactions, when they signify anything at all, indicate an immediate clinical reaction; but delayed local reactions are not indicative of delayed clinical reactions; in fact, they have no known significance.

Time has not permitted me to go extensively into details, nor to give statistics on the relative frequency of the exceptions to the rule. Suffice it to say that the application of the test to the diagnosis of a clinical condition must be made with the greatest care, and we make it a rule for the absolute diagnosis of a specific etiologic factor to conform to the following commonsense requirements, which we have dignified by the term postulates:

1. Hypersensitiveness must be proven either by:

- a. A local reaction of a marked type that can be verified at will, or by

- b. A constitutional reaction that duplicates the clinical condition under study when the allergen is introduced by ingestion, inhalation, or by intradermal, subcutaneous, or intravenous injection.

2. It must be proven that the individual comes in contact with the reacting substance in such a way that it can be responsible for the clinical condition.

It is urgently recommended that fresh adrenalin (epinephrin) solution (1:1000), be always on the work table when tests are being made, in case it is needed to combat a constitutional reaction.

The treatment of any allergic condition depends, of course, upon its cause. All foci of infection must be cleared up. Oftentimes cases with severe asthmatic symp-

toms are absolutely cured by the proper attention to the nose and throat. Recently we have had three cases whose severe asthmatic symptoms were completely relieved by an autogenous hemolytic streptococcus vaccine when this organism was demonstrated in the stool. It was rather striking that all three of these cases showed a great deal of intestinal gas formation. Whenever the gas developed, asthma started. When there was no intestinal gas there was no asthma.

Cases showing positive blood Wassermann tests should receive specific treatment. One case of asthma which was gone over very thoroughly in our clinic showed no other cause for his allergic condition. After receiving specific treatment his asthma automatically ceased.

All the allergies in which the cause can be demonstrated by the skin tests can be treated by injections of the extracts to which the patients are sensitive.

When a case is found sensitive to certain substances which can readily be removed, either from the diet or environment, it is much easier to follow this procedure than to attempt desensitization. The results, too, are more immediate. For example, if a case is sensitive to feathers, the answer is—remove the feathers. If a case is sensitive to some of the unusual foods, such as shell-fish, strawberries, mustard or pineapple, it is a simple matter to prohibit such foods. On the other hand, if a case is sensitive to such common articles of diet as milk, egg-white, or wheat, it may be necessary and desirable to desensitize. It is a hard matter for a person to take an ordinary meal without eating some of these common articles. Then too, the patient's occupation should be considered. For example, a person with a considerable sum of money invested in a poultry farm could not be told off-hand to quit this business because he was feather-sensitive. An earnest effort at desensitization should first be made.

It is desired at this point to call attention to a systematic and uniform method of making the skin test. This system has been adopted and is in use at the asthma and hay-fever clinic of the New York Hospital. It obviates all possibility of error in knowing where each extract is placed. As a general rule the arm is the site chosen for the skin tests. In case of society women, who spend a large part of their time in evening clothes, there is of-

ten a great objection to the temporary disfigurement of the arm. In these cases the inner-antero aspect of the thigh can be used. After the technician decides upon what his routine tests will consist of it is wise to inject these tests in the same order on each patient.

The routine tests at our clinic consist of eighteen inhalent extracts and eighteen food extracts. No matter which arm or which thigh is used, No. 1 extract is injected on the upper, left-hand corner of a presumed rectangle. No. 2 is placed one inch below, No. 1, 3, 4, 5, and 6 follow each other consecutively in a straight line from above downward. That gives us our first six extracts in a straight row. No. 7 is placed one inch to the right of No. 1, and 8, 9, 10, 11 and 12 follow down in a straight line under No. 7. No. 13 is placed one inch to the right of No. 7, and follows the same routine. When completed, there are three rows of six tests each. It makes no difference whether the right or left arm or thigh is used if this routine is followed, working from above downward and from left to right, there is no possibility of confusing the identification of your extracts. Another point is that, in a large clinic, where a number of testers are working at the same time, a mere glance at a reaction indicates to any and all of the testers what extract is giving the reaction, provided they know which group is being used.

For those who are not skin-sensitive, it is necessary to use the straight pollen, either as an ophthalmic test or directly into the nose.

Desensitization of pollen cases is accomplished in one of two ways. The prophylactic or pre-seasonal desensitization is better. This consists of first determining the kind and degree of sensitiveness. After this is determined, the treatment consists of subcutaneous injections of the proper strength extract twice a week, beginning six weeks or two months before the offending plant is due to blossom. The prophylactic or seasonal treatment is given when the patient is not seen soon enough to give the pre-seasonal treatment. It is best done by a subcutaneous injection of the proper strength extract daily until the patient has become properly desensitized. An effort may be made to place the patient in a pollen-free room until desensitized, if the symptoms warrant.

In treating the symptoms of any aller-

gic condition as they arise there are two drugs which are specially valuable. Most acute attacks of hay-fever and asthma can be relieved by epinephrin solution (1:1000) hypodermically, in doses of from 0.3 to 0.5 cc., repeated in fifteen minutes if necessary. Another drug which is relatively new, with very much the same physiologic action as epinephrin, is ephedrine sulphate or hydrochloride. The advantage of this drug over epinephrin is that it can be given by mouth, in capsule form, and that it usually does not cause heart pounding, which often follows the injection of epinephrin.

There are numerous other drugs which have been used since time immemorial. Potassium iodide, calcium salts, etc., may be tried, but usually without much benefit. X-rays and other forms of physiotherapy have been quite beneficial in some forms of bronchial asthma.

It is possible to purchase on the market, testing extracts for hundreds of different substances. Time was when a person was scratched from stem to stern with hundreds of these testing extracts. Experience has shown, however, that very few substances are in the list of usual offenders. Unless some of the unusual extracts are indicated from the case history, the routine tests have been reduced to comparatively few. Our clinic uses two groups of testing extracts.

The first group is called the inhalent group, and consists of eighteen extracts as follows:

Timothy	Horse Ser.	Duck Ep.
Ragweed	Cat Ep.	Goose Ep.
Carelessweed	Dog Ep.	Tobacco
Orris	Rabbit Ep.	Pyrethrum
Dust	Goat Ep.	Cottonseed
Horse Ep.	Chicken Ep.	Sheep's Wool

The second group is called the food group, and consists of eighteen extracts as follows:

Wheat	Milk	Chocolate
Corn	Egg	Peanut
Rice	Chicken	Almond
Rye	Beef	Coconut
Oats	Lamb	Mustard
Buckwheat	Pork	Black Pepper

These extracts have been chosen because they have been found, through years of study, to be the most usual causative agents for allergic conditions. If the history points toward some unusual substance, the patient is tested with this extract.

In the making of extracts, the question



of the proper standardization is imperative. The principal objection to most of the commercial extracts on the market today is that they are not scientifically standardized. The Department of Applied Immunology in the New York Hospital and Cornell University Medical College have unquestionably proven that the nitrogen standardization is the proper one. They have shown that the substance in a pollen (atopen) which causes allergic symptoms runs hand in hand with the nitrogen content of the pollen. If the nitrogen content is low the amount of irritating substances is low, and vice versa. Knowing that the nitrogen content of the same pollens from different localities may vary, it has been shown that the best way of determining and specifying extracts is upon a nitrogen basis. In using the nitrogen basis we can be sure of our extract strengths, no matter where the pollen is obtained. The nitrogen determination is done by the well known Kjeldahl method.

It is not necessary here to go into the details of extract making. Suffice it to say that most of the extracts are made by using a saline solution as the extracting medium. The actual technic is exacting and time-consuming and should be done only by those who know how and who have the proper laboratory equipment. Some commercial extracts contain glycerine as a preservative. The presence of glycerine precludes an ophthalmic test, because the glycerine itself will produce enough conjunctival irritation to be readily mistaken for a positive allergic reaction.

The check-up on pollens which are present in the air in a given locality is done by exposing glycerine plates daily or as deemed necessary. The plate contents are then examined under a microscope to determine the pollens flying at that particular time. In general terms it can be stated that the pollens of plants whose flowers have color, odor, or both, are not wind-borne. Exposure to such pollens, therefore, is only by close contact with the flowers.

In regard to the two principal wind-borne offenders—the grasses and the ragweeds—Vander Veer and Cooke have proven quite conclusively that timothy will take care of all the various grasses and that the different ragweeds can be handled by an extract of any one of them. Timothy contains all the atopens that any of the other grasses contain and can be used to test and treat all grass cases;

and there are a large number of grasses. Over 100 different grasses have already been identified and classified in the vicinity of San Antonio.

In conclusion, it is desired to state briefly the numerical basis upon which we base our report. This is done merely to show that our observations have not been based on a mere handful of cases:

#### PATIENT DAYS BY YEARS

*1927	1928	1929	1930	1931
472	2148	2253	1844	2226

(\*Clinic opened August 15, 1927).

Port Sam Houston, Texas.

—o—

#### IMMEDIATE CECOSTOMY AND CONSTANT LAVAGE IN MERCURIC CHLORIDE POISONING

In an analysis of 163 cases of mercury poisoning at the Mount Sinai Hospital of Cleveland, S. S. Berger, H. S. Applebaum and A. M. Young, Cleveland (Journal A. M. A., Feb. 27, 1932), noted a number in which the patients survived the usual gastric and renal damage but succumbed to a gangrenous colitis. This lesion was apparently successfully prevented in three cases by constant colonic lavage following cecostomy done within a few hours after the ingestion of the poison. The authors believe that immediate cecostomy and constant colonic lavage is the most effective measure for the prevention and treatment of the gangrenous colitis. By immediate cecostomy is meant its performance as soon as the patient is admitted, provided he is not in extreme shock. The diagnosis of mercury poisoning is first established by the detection of mercury in the gastric lavage by the electrolytic method of Booth and Schreiber, which can be done in a few minutes.

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#### HOW TO CORRECT DIARRHEA

After a starvation period of twelve to twenty-four hours on boiled water or gelatin water (1-3 ounce of gelatin to one pint of boiled water), the infant should be given Protein S.M.A. (Acidulated) diluted four level tablespoons with nine ounces of water, and without any additional carbohydrate.

	1st Day	2nd Day	3rd Day(*)
Severe cases	3 oz.	6 oz.	9 oz.
Medium cases	10 oz.	15 oz.	20 oz.
Mild cases	15 oz.	30 oz.	

(\*) Until the proper amount for their age and condition is reached, which is 200 c.c. per kilo of body weight per twenty-four hours, or three ounces per pound of body weight per twenty-four hours. However, the total twenty-four hour intake need not go above thirty-two to thirty-five ounces or 960 to 1050 c.c.

After 48 hours or when the stools become normal, ALERDEX (Hypo-Allergic Maltose and Dextrins) should be added gradually, beginning with one ounce to the quart, and increasing until the infant is gaining steadily in weight. In certain cases, it may be necessary to increase the carbohydrate to a total of 12 to 15% (3 to 4 ounces of carbohydrate to the quart).

## TREATMENT OF HEMOPHILIA WITH THEELIN

CHAS. ED WHITE, M.D.  
MUSKOGEE

Hemophilia is a constitutional anomaly. It is characterized by being dominant in the male and recessive in the female. Hemophilia is further characterized by a marked prolongation of the coagulation time. There is a definite hereditary link and the hidden tendency of the mother is transmitted to the son who manifests a life long tendency to hemorrhage from the most minor injury.

Howell<sup>1</sup> advances the theory that the anomaly is due to the blood platelets which may be normal in number and morphology, but fail to yield the cephalin necessary for a normal clotting process.

Birch<sup>2</sup> has confirmed the platelet theory of Howell's and has further shown that in the male the hemophilia is due to the lack of the ovarian hormone, which is now known as Theelin. She showed that the urine from normal males contained enough ovarian hormone when concentrated to produce estrus when injected into rats. Estrus did not occur when the urine of hemophiliacs was used.

Foord and Dysart<sup>3</sup> report the successful use of ovarian extract in a clinical case of hemophilia following tonsillectomy.

Recently I have had occasion to use Theelin in two cases (brothers) who were definitely hemophiliacs, and advised its use in a third male. The results were excellent in each case, as shown by the following report:

Case No. 1. Baby, K. L. N., age 6 months, referred by Dr. Graves, Boynton, Oklahoma, was admitted to the Oklahoma Baptist Hospital, Muskogee, Oklahoma, December 15, 1931. A well developed breast fed baby with its first illness. The baby had been having fever about a week before admittance. When admitted his temperature was 102, pulse 140, respiration 33. He continuously rotated his head from one side to the other. There were slight convulsive movements of the upper and lower extremities. The right ear drum was inflamed but with no bulging. The throat was mildly inflamed. There was an occasional mild paroxysm of coughing and many mucous rales over the base of the right lung. There were no other abnormal findings. The temperature continued to rise during the night and at 8:00 A. M., on the 16th, a paracentesis of the right ear drum was done by Dr. M. K. Thompson. Just before the ear drum was incised the mother told us that the baby was a "bleeder," and she had lost three boys from hemorrhage; one 10 years old, who bled for 17 days before death from a small cut on the foot;

one 14 months old, who bled for 34 days from a slight injury to his gums; one 4 months old died of hemorrhage of the lungs. The first two boys died in the hospital. She has 3 girls living who are not bleeders. There has never been any other bleeder in her family as far back as she is able to ascertain. On account of marked bulging of the ear drum and the irritability of the baby, it was decided to make a slight opening in the drum. Then our trouble started. There was a rapid drip of blood from the ear from then until 5:30 P. M. The ear was packed with stypticine, thromboplastin, adrenalin and tannic acid, at different times. The patient was also given 25 c.c. of whole blood intramuscularly from the father but the hemorrhage continued. These agents apparently had no influence on the coagulation. In a conversation with Dr. Hugh F. Dwyer, Kansas City, Missouri, by telephone, the use of Theelin was advised. One-half c.c. was given intramuscularly at 5:00 P. M., and at 5:30 P. M., the bleeding began to slow down and had completely stopped by 6:00 P. M. When the pack was removed a slight oozing occurred which persisted only for a few minutes. Two days later another ½ c.c. of Theelin was given intramuscularly. The baby developed a bronchopneumonia but had an uneventful recovery. The mother insisted on taking the baby home the 10th day. Since going home it has received 1-3 ampoule Theelin every four days. The mother says the baby has had several scratches but has never bled any more than a normal child. Similar wounds in her other boys would have bled for 3-4 days. This baby was returned to the hospital June 21, 1932. Laboratory report showed: Erythrocytes 4,250,000, Leucocytes 24,500; Haemoglobin 78% Sahli. Total Neutrophils 77% (Staph. 12%; Segmented 65%); Lymphocytes 20%; Monocytes 3%. Coagulation time 9 minutes (capillary pipette method). Platelets 200,750 per c. mm. The red cells showed only a slight anisocytosis. Baby was admitted to hospital for diarrhea and two days later developed measles. His recovery was uneventful.

Case No. 2 (Brother of Case No. 1) was presented for examination and the following history obtained. His mother said he was subject to what she believed was rheumatism, and bled "under the skin" from the slightest injuries and these masses remained for weeks. Abrasions of the skin would ooze for 3-4 days and some had bled as long as a week. Physical examination showed an anemic, undernourished, 10 year old boy who walked with a decided limp. There was a large hematoma of the left knee. Otherwise, the examination was essentially negative. No laboratory examination was made as the mother would not give her consent. The patient was returned to Dr. Graves with the suggestion that he be given 2-3 ampoule of Theelin every four days and that he return within two weeks for further observation. However the patient did not return until June 1st at which time the mother stated there had been marked improvement. She said the patient had received many scratches and bruises with no greater hemorrhage than would be expected of his sister. When seen the second time the patient had not received any Theelin for more than three weeks because the family had been on their vacation. Laboratory work was permitted by the mother and the report showed: June 1, 1932; Erythrocytes 4,450,000; Leucocytes 14,700; Haemoglobin 100% Sahli. Total Neutrophils 73% (Staff, 3%; Segmented,



70%); Lymphocytes 22%; Monocytes 5%. Platelet count 413,800 per c.mm. Coagulation—3 minutes and 30 seconds (capillary pipette method). No changes in the red cells. Clotting time (Lee and White's method) blood obtained at 2:00 P. M., and 5 hours later blood had not clotted. At 8:00 A. M., June 2nd, a feeble clot had formed which did not hold all the red cells. Wassermann negative. Von Pirquet negative. Bleeding time (Duke's method) one minute and 30 seconds. X-ray findings made June 1, 1932: Lateral view of patient's left knee revealed a roughing of the contour of the lateral condyle of the femur, and some leveling of the joint surface of the tibial epiphysis. These changes are not noticeable in the patient's right knee. The left knee also demonstrates a considerable evidence of soft tissue swelling. The swelling is probably extra capsular in as much as the patella is not elevated. We see no evidence of sub-periosteal hemorrhage. There is no involvement of the epiphyseal line. The swelling may be the result of the peri-capsular hematoma. June 3rd the patient was given one whole ampoule of Theelin and the following day, June 4th, the clotting time was three hours (Lee and White method). This showed a marked decrease of clotting time after Theelin was given. The patient is now receiving one whole ampoule of Theelin every 4 days. He has improved continuously in every respect since Theelin was first begun.

Case No. 3. Male, age 3 years, admitted to Muskogee General Hospital February 28th. Two days previous to admittance the patient fell and injured his jaw and shoulder. His mother stated that he had been bleeding from the gums and under the skin of the face and shoulder ever since. Family history was negative except as follows: Brother died at 8 years following a blow on the head and his death was believed to have been from a cerebral hemorrhage. He has one sister 5 years of age who has always been in good health. Examination of the patient showed a well developed male child with a marked hematoma of the whole right side of face, a large hematoma of shoulder and a brisk oozing from the gums of the left side. Other physical findings were negative. Several coagulants were used locally, calcium was given internally and other usual procedures carried out to stop the hemorrhage. The patient continued bleeding for two days. One ampoule of Theelin was given and the bleeding stopped at the end of six hours.

#### SUMMARY

A report of three cases of clinical hemophilia in which Theelin (P. D. & Co.) was used to control hemorrhage. No definite dosage was known or used. There was no reaction in any case from its usage. Bleeding stopped promptly and has not recurred in these cases. Theelin hastens clotting time as shown in case No. 2.

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## ALLERGIC DISEASES—A HISTORICAL SKETCH

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It was Louis Pasteur who said "science has no country." How true this statement seems to be as we study the annals of medical history. Not unlike other lines of medical research we find that men from many countries have added their contributions to the study of the symptom complexes spoken of as allergic diseases. The first description of asthma is found in the book of Exodus. A reference is made concerning it in two passages of Homer, and Hippocrates mentioned it. But it was Aretaeus, who lived 300 A. D., at the time of Galen, who gave us our classical description of the asthmatic paroxysm, and may I repeat it:

" . . . the evil is much worse in sleep; the voice is liquid without resonance, a desire of much and of cold air. . . . They breathe standing, as if desiring to draw in all the air which they can possibly inhale; and in their want of air they also open the mouth as if to enjoy the more of it; pale of countenance except the cheeks which are ruddy . . ."

Aurelius Cornelius Celsus, who lived in the reign of Tiberius Caesar, preceded Aretaeus with writings on many scientific subjects, one being that of medicine. He divided the various diseases with shortness of breath into three classes, depending on the degree of difficult respiration, *namely*, dyspnea, asthma and orthopnea. Despite the fact that Aretaeus was the first to describe asthma, the classification of Celsus remained popular through the Middle Ages. During this period we find practically no writing concerning the syndrome.

The modern conception of bronchial asthma as a disease entity dates from the writings of Thomas Willis the latter part of the 17th century. However, before this time there is an interesting bit of clinical history of asthma that I must not fail to mention. In the year 1575 Jerome Cardan, a great clinician in Padua, was called to Edinburgh to see the Archbishop, who had been a severe sufferer of asthma for many months. After studying his condition carefully he advised the Archbishop to change certain articles of diet, and to eliminate from his bedroom the feather bed on which he was sleeping. The Archbishop's recovery seemed almost miraculous, and he was so pleased with the advice given him by Cardan that he doubled the

fee that had been agreed upon. No doubt Jerome Cardan had no conception of a theory of hypersensitivity to feathers, as we think of it today, but his broad clinical experience had taught him in some cases there was a definite relationship between feathers and asthma.

We find no other reference to the relationship between animal epithelium and asthma until 1835, at which time a description was given in the American Journal of the Medical Sciences, Vol. XVI, page 212, of a case of asthma excited by new feathers. In 1858 Henry Hyde Salter published his classical work describing cases of asthma and hay fever due to animal emanations. Being himself a sufferer of the disease he early in his career turned his attention to the disorder in the chest and began to collect material for work on his own malady. His description of "cat asthma" is of particular interest. Of this form of asthma he writes:

"The cause of this asthma is the proximity of a common domestic cat; the symptoms are very similar to those of hay fever, and, as in the case of hay fever, are occasioned by some sudden influence inappreciable by the senses. I cannot recollect at what time I first became subject to cat asthma but I believe the liability has existed from the earliest period of life. I believe some asthma would present itself if I were sitting by the fire and the cat sleeping on the hearth rug; but the effect is much greater when the cat is at a distance of one or two feet or still closer; it is still further increased by the raising of the rug and moving and rubbing about, as is the habit of cats when they are pleased; also by stroking their fur, but most of all when they are in the lap just under the face."

Henry Hyde Salter's good wife and medical confreres laughed at him when he told them concerning his idea of the domestic cat as the cause of his trouble. However, before his death he showed that animal emanations from practically any animal are not uncommonly the sole, and often a contributing factor in asthma.

In 1819 John Bostock, an English physician and clinician, read a paper before the Royal Medical and Chirurgical Society of London on a "Case of Periodical Affection of the Eyes and Chest," in which he presented to the members of the society the clinical symptoms of a seasonal affection which had troubled him since childhood. A little later he described the affection as "catarrhus aestivus" or "summer catarrh." However, since the time of his first writing the symptom complex has been popularly spoken of as hay fever.



JOHN BOSTOCK

Born at Liverpool, England, 1773; died at London, 1846. Author of a number of the early papers dealing with the symptom complex "hay fever." The "father of clinical allergy."

In a monograph on hay fever Dr. Philip Phoebus described what is probably the earliest experiment carried out by a hay fever patient upon himself. This was done by Dr. W. P. Kirkman, a German physician. The latter tells us that a day or two before Christmas he noticed in his hot-house a single plant of *Anthoxanthum odoratum* (Sweet vernal grass) loaded well with pollen. This, he thought, offered a splendid opportunity for experimenting with this particular grass, so he plucked it, rubbed the pollen in his hand, and sniffed it up his nose. Almost immediately it brought on an attack of hay fever which lasted an hour.

Credit, however, must be given to Charles Harrison Blackley, of Manhattan, England, who in 1873 proved beyond question that pollen is the cause of seasonal hay fever. The writings of Blackley are remarkable when we view them in the light of our present knowledge of hay fever. Clinically he tested on himself the pollen of nearly 100 different species of grasses and flowers. No methods of testing for protein sensitivity are used today that he did not use at that time, but of course they have been greatly modified.

In America we find Morrill Wyman, of Cambridge Massachusetts, to offer the first noteworthy contribution on the subject of allergy. In 1854 he described the disease in his lectures at the Medical School of Harvard University, and



in 1866 wrote a paper on the late form of hay fever entitled "Autumnal catarrh," which he read before a meeting of the Massachusetts Medical Society. Wyman was probably the first to recognize the pollen of ragweed as a causative agent of autumnal hay fever. With some other members of his family he had been a lifelong sufferer of the autumnal form of the disease and upon himself and them he proved clinically that the pollen of ragweed was the specific factor in the cause of their hay fever symptoms.

The pollen theory of the etiology of hay fever offered by Blackley and Wyman was by no means generally accepted in the United States and abroad. It was offered during the so-called bacteriologic age. The research work of Pasteur and Koch had led many to believe that the symptoms were of infectious origin, although not one of Koch's postulates had been fulfilled in any experimental work they had done on the etiology of hay fever.

A quarter of a century later Dunbar, also a victim of hay fever, repeated many of the experiments of Blackley and Wyman, and wrote extensively concerning them, and established in the minds of many physicians the importance of the role played by pollen as a cause of hay fever. He laid the scientific foundation from which has evolved our modern methods of determining the specific factors and the treatment of hay fever and asthma.

In the early part of the 19th century some French investigators called the attention of the medical profession to the fact that there was probably a definite relationship existing between asthma, hay fever, eczema, urticaria and migraine, but during the remainder of that century little was written concerning the relationship.

This brings us down to the 20th century, and it is interesting to note that in allergic investigation the field of action changes from England, France and Germany to our own country. In 1906 William Scheppegrell established the synchronism of Fall hay fever and the pollinating season of the short and giant ragweed. Subsequently he proved the innocence of the goldenrod, the generally accepted cause of Fall hay fever. He deserves much credit for arousing the interest of both the laity and the medical profession in this country in the study of the cause and prevention of hay fever and asthma.

In 1910 Meltzer recognized that the in-

sufflation of the lungs seen in guinea pigs which had died of anaphylactic shock was quite comparable to the pulmonary distention with emphysema seen in patients with bronchial asthma. In 1912 Schloss published the classical description of his patient sensitive to egg, almond and oatmeal. In 1914 Goodale recognized a case of horse asthma who was very sensitive to horse serum. He demonstrated that a drop of diphtheria antitoxin placed on the lobe of the ear or on the end of the middle turbinate caused an immediate local reaction, with swelling, pallor and local irritation. With the bits of knowledge given by Meltzer, Schloss and Goodale as a nucleus it remained for Koessler, Walker, Coca, Cooke, Vaughan, Piness, Rowe, Duke, Hurwitz and others in this country with their experimental work in immunology and extensive botanical surveys to throw sufficient light on the hay fever and asthma problem that henchforth, with few reservations, the diseases mentioned must be regarded as curable, or at least controllable, and their tortured victims are to be no longer neglected.

The names I have just mentioned are American physicians, all of whom, except one, are now living, who should, and evidently will be given due credit for their endeavors when the medical history of the present age is written.

During the last three years the greatest advancement in allergic work has been made in the discovery of newer methods of determining the etiologic factors in allergic syndromes other than hay fever and asthma, *namely*, migraine, urticaria, and certain forms of eczema and colitis. Much credit is due Vaughan for emphasizing the important role that food sensitization and a sensitization to other substances plays in the cause of eczema. He was first to show that migraine patients sensitive to food or foods could be partially or wholly relieved by specific avoidance, and that an attack of headache could be produced by the ingestion of the specific food. Rowe suggested that food allergy must be considered a possible cause in all cases of migraine. We have recently studied a series of 2732 individuals of various walks of life with an idea of determining the incidence of migraine in the United States. We also studied a large series of patients who were sufferers of migraine. From our study we concluded that approximately 4 per cent of all the people in this country are now migraine sufferers, and

that at least 25 per cent of these are children.

From our study it appears that migraine, that snag over which the medical profession has stumbled for centuries, is interchangeable in the linkage with other allergic diseases, and that a specific sensitization to food or foods is the primary etiologic factor in all cases of true migraine. We are led to believe that multiple localized areas of congestion of the cerebral cortex, comparable to hives on the skin, will most logically explain the multiple cortical symptoms complained of by migrainous patients. In our study we estimate that about 14 per cent of the population of the United States sometime in life suffer from one or more of the allergic syndromes.

The question, what factors play a part in determining who might become sensitive and have allergic symptoms is frequently asked, both by the laity and the medical profession. In answer to the question I should say that in the first place the ability to become sensitive is inherited and is transmitted according to the Mendelian law. So it appears to be a mark of distinction to be an allergic individual, inasmuch as one is in the selected few. In the second place, the degree of contact has much to do with determining the substances to which one becomes specifically sensitive.

A second question frequently arises, again in the minds of both the laity and the physician, as to whether the allergic patient does not fall in the class of the so-called neurotic. My answer is "emphatically, no." However, they are usually people of sensitive mentalities, mercurial dispositions, but they are dynamic characters, and unless their symptoms are very severe we find them coping with life's problems much better than the average individual.

With the newer methods of determining the etiologic factors and the more practical methods of treatment at hand today, much can be done for those who suffer from allergic diseases. What the future holds for us no one knows, but in all probability during the next decade added information will be given us that will greatly enhance the value of our present methods. From our study of the medical history of the past we realize that many of our present conceptions concerning allergy are wrong since both in experimental and clinical medicine it is so easy to mis-

interpret our findings. How true are the words of Sir William Osler, who said:

"Even in populous districts, the practice of medicine is a lonely road which winds uphill all the way, and a man may easily go astray and never reach the Delectable Mountains, unless he early finds those shepherd guides of whom Bunyan tells, Knowledge, Experience, Watchful, and Sincere."

I must not let this evening go by without a word of thanks. I feel very grateful that I have been reared in this mid-western territory, educated both academically and medically by her universities, and I realize I owe her a debt which is still unpaid. I look forward into the puzzling uncertainties of the future with high hopes that I may add certain bits of knowledge concerning the allergic diseases that will help to pay this debt. A decade and a half ago medically I sat at the feet of our worthy president. I then, like many others, admired him, as we still do. He regards us with a certain parental affection, as we him with filial pride. Especially during his presidency I feel greatly honored in being asked to address you on this occasion.

#### BACILLURIS UNDER KETOGENIC TREATMENT

In October, Anson L. Clark, Rochester, Minn. (Journal A. M. A., May 14, 1932), reported the results in two cases of bacilluria of *Escherichia coli* type, in which the ketogenic diet was given. Since that time, he has applied the treatment in several additional cases of persistent bacilluria, and the patients have been under observation long enough to allow the results to be evaluated. Several notable features emerged from observation of these cases, namely: 1. The general condition of the patient must be such that he can endure the alteration in his diet. 2. Cooperation of the patient is absolutely necessary. 3. The patient must be able to digest and assimilate fats. 4. The normal intake of fluid should be maintained. Increase in the intake of fluids may cause undesirable dilution of ketogenic products. 5. If the infection is in the upper part of the urinary tract, treatment must be continued for a longer time than if the infection is in the bladder. 6. The ketogenic diet tends to entail constipation and gastro-intestinal upsets, but a dietitian can forestall these effects. 7. *Escherichia coli* responds to this type of treatment more readily than organisms of the genus *Pseudomonas* or than *Aerobacter aerogenes*. 8. When patients are given the ketogenic diet, the appearance of acetone bodies in the urine and increase in the acidity of the urine would be expected. Nevertheless, in some cases such bodies are not found and acidity is not increased. 9. The effect of the ketogenic regimen does not seem to be solely the result of reduction of the pH of the urine. There is apparently some bactericidal substance in the urine of patients who are under the ketogenic treatment, for growth of the bacilli may be inhibited even though the pH of the urine is more than 4.6 or 5.0.



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### EDITORIAL

#### THE TULSA TRIBUNE'S ATTITUDE ON ADVERTISING

##### A FLEXIBLE CODE

"The American Medical Association believes it "unethical" for its members to advertise. It is very strict against any physician giving the facts about his qualifications, the possibilities of medical or surgical treatment, or anything else concerning actual medical practice, to the public. It demands that the public be kept in the dark concerning the medical profession. This ruling apparently is for the benefit of members of the profession who would have little practice if they were

forced to compete with abler physicians who advertised their ability. It is tough, however, on the victim of disease who stumbles blindly into the office of the wrong doctor, or who, not knowing that there is a cure for his peculiar ailment if he could go to the proper specialist, puts off a visit to a consulting physician, who would charge him a fee for sending him to the right man, until it is too late.

The Oklahoma State Medical Association, just winding up its fortieth annual convention in Tulsa, adheres to the so-called "code of ethics" which denies the public the information about doctors which the public sorely needs. It disapproves of the advertising physician. Yet, in the annual report submitted to the convention by the secretary, treasurer and journal editor of the association, it is disclosed that nearly one-half of the association's total revenues last year were derived from advertising. Under the heading "Journal and Advertising" in the financial statement is the report. "We have received from our advertisers \$6,022.85." The total receipts were \$12,591.85.

It is ethical for a member of the Oklahoma State Medical Association to read in his trade paper the advertisements of medicines, surgical tools and other things offered for sale to physicians. But it is unethical for that same member to tell disease sufferers, through the advertising mediums which they read, of the treatment he has to offer. The physician buys from the advertiser who offers for sale the things exactly suited for his purpose, and he takes the word of the advertisement for it. The public is denied the right to compare, in advance of purchase, the wares offered for sale of various physicians. It is a queer code of ethics."—The Tulsa Tribune, May 27, 1932.

Now this would be a fine system for the medical profession to follow. In the first place, from past observance, we deny the fitness of the TRIBUNE to advise the medical profession as to any matter of ethics, for we have not the highest regard for the ethics of the TRIBUNE, as evidenced by their actions in the past. However, that has nothing to do with the matter of doctors advertising. Would it not be a fine thing to wake up some morning to find advertising from the one hundred some odd doctors residing in Tulsa emblazoned across the pages of the TRIB-

UNE calling attention to the wonderful qualifications and fitness of these various doctors to do various types of work. The poorest and most unfit doctor in Tulsa could submit copy, probably prepared by the copy writer of the TRIBUNE itself, pay for it, and it would go out to the public as something worth while, while as a matter of fact the man being advertised would be wholly unfit to carry out what he claimed to be able to carry out. Good doctors have, and always have had abhorrence toward advertising in any form. They are willing to help people in any and all manners where at all possible, but they do not see the propriety of advertising their fitness to do so.

It might be news to the TRIBUNE to know that when this is written the writer has before him a "Medical Journal" which has altogether twenty-one advertisements which are positively not acceptable to the Journal of the Oklahoma State Medical Association for the simple reason that the matter they advertise has been thoroughly investigated by highly qualified persons and found untruthful or lacking as to their claims. As stated above, we repeat we would not accept these advertisements for any amount of cash; primarily we do not operate the Journal for cash, the money received from advertising merely goes to betterments, not for the payments of dividends, like stockholders of the TRIBUNE receive, but is expended in the furtherance of medical progress of doctors of Oklahoma. We feel we are in better position to say whether or not we are to advertise than is the TRIBUNE. To any thoughtful person, the idea of doctors advertising, like dealers in salmon and sardines, cream of wheat and post toasties, is preposterous and out of the question.

We recommend at least three hospitals in Tulsa for the consideration of the writer of the TRIBUNE editorial, the Morningside, St. Johns and the Oklahoma Hospital and Sanitarium. We recommend the latter most highly because it is especially fitted to treat mental diseases.

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#### ALLEGED MALPRACTICE CASES

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As was to expected the great depression has increased materially the number of alleged malpractice cases brought against physicians. At times we feel a sense of irritation toward our brother physician, for many of these suits are brought about by the attempt of a thought-

less physician to collect a small, insignificant fee, from a person who is often unable, as well as unwilling to pay. The end result being the physician is called upon to pay some attorney several times more than the original fee amounted to. Even when a physician secures a judgment, after the alleged malpractice charges fall flatly to the ground, he has only won a phyrrie victory. In other words there is no use to fight unless there is something worth fighting for. It is admitted that it is irritating to have someone beat you out of a small fee, but probably common sense would indicate that in many cases it would simply be best to forget the matter, mark the patient off your records and advise your colleagues that he is a rascal and let the matter end. In connection with these suits we will quote from the annual report of the Committee on Medical Defense of the Ohio State Medical Association; and certainly too often there is a physician secretly behind the scenes, who if the truth were known, is the direct cause of a malpractice suit against his brother physician. The "gist" is this—"If doctors were a little less critical of each other's work, a little less given to currying favor with their patients by off-hand condemnation of the prescriptions or the work of previous medical attendants, often without knowing the facts and circumstances under which such prescriptions were given or the professional service rendered, fewer of their professional brethren would be the subjects of damage suits and fewer of them would be called to the stand to explain what they meant by such off-hand and ill-advised criticism, which is often the first inspiring cause for the lawsuit which follows."

It would be well to remember in these strenuous times that people are in an irritated state of mind and will snarl and snap at a doctor who has rendered them good and efficient service. Probably they are no madder at the doctor than at everybody else, just on general principles after his dissatisfaction and the result in a useless suit.

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#### INDUCED MALARIA IN THE TREATMENT OF GENERAL PARALYSIS

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For sometime the treatment by the infection of patients suffering with paralysis by infection with malaria has been used with more or less success. Recently the United States Public Health Service



cooperating with the State Hospital at Columbia, South Carolina, inaugurated a program of study of these cases. They noted that for several decades psychiatrists had known that cases of general paralysis which became infected with febrile disease frequently showed complete remissions for long periods of time. For that reason the inauguration of a high temperature was undertaken by means of deliberately infecting the patient. Many remarkable cases of improvement have been shown after such treatment. However, lately there has been substituted, what theoretically is probably a better and safer form of treatment and that is the production of elevation of temperature by the use of diathermy. It is said that such rises in temperature so produced, are as effective as those produced by the infection of a patient with malaria. In some cases malarial infection naturally makes them very ill. The Public Health Service Bulletin does not seem to consider that phase of the matter. It is believed that an attempt should first be made to establish high febrile conditions with diathermy rather than by infection with malaria. If the febrile condition, induced by diathermy, is successful it would seem that the patient would, or should be in better condition than if directly infected with the malarial plasmodium.

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### VACATION PERILS

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We have them with us annually, we try to call attention to them that often. Most people are very well aware of their dangers but probably the majority of the people are not. Very likely one of the most dangerous things to people is the front cover pictures to be seen on any one of the numerous "Outdoor" magazines. It usually shows a lake or stream, with a tent set up and the cooking going on outdoors. There is no place in the United States where there is not a little danger in such trips. Some portions of the country are positively dangerous. The writer recalls entire parties returning with well developed malarial infection, all of which was unnecessary, had the simplest preventatives been used.

We will undertake to list some of the things which may infect, affect or trouble the vacationist, if he is not careful. The most dangerous, likewise the most rare, is snake bite. For that we have anti-venom, which may be bought outright, but is

rather costly, or it may be rented by the day from most any well equipped drug store. One of the dangers not much thought of, yet too commonly indulged in, is the use of our celebrated home-made "corn" whiskey. Sometimes it is made of corn, sometimes of bran or chops and sugar, but almost invariably it is new, raw and positively dangerous, even if it were made in a good still, but most of it is made in tin tubs with rubber hose, etc. The only preventative of this is not to use it. Poisoning from poison oak or from various members of the rhus, family is not uncommon. Under proper treatment half of the cases subside in about 2 to 3 days but some of them become very severe and some people are peculiarly susceptible to its influence. The automobile has brought with it enormous dangers. The vacationist is usually in a hurry, he is on poor roads and as a rule is a stranger to its pitfalls and is likely to find himself overturned in a ditch, his car may burn up or he may have a fractured skull, or broken neck, or all the way down to no injuries whatever, nevertheless it is a danger not to be overlooked. The woods and hills are rough, falls and injuries from them are not at all uncommon, but it is doubtful if one party out of fifty or one hundred is supplied with the simplest first aid kits. The doctor should advise his patients of the benefits from simple iodine, mercurochrome, phenol and zinc oxide ointment, clean gauze, bandages, etc. Campers often return with very irritated and aggravated skin conditions due to insect bites. It is difficult to protect against these, except with the immediate application of various forms of antiseptics which may be carried along and applied by any intelligent person.

The records of our Mexican occupation, just prior to our entry into the World war, when we had troops scattered from the Pacific to the Gulf, who were sleeping out doors, showed that we had more trouble with the bites from simple insects than from the most poisonous snakes and scorpions.

In closing one should not forget the necessity for pure water. There is very little running water in the United States that is not more or less dangerous. Typhoid and dysentery may be prevented by the use of vaccine and the boiling or other simple means of sterilization of water.

In the role of guardian to hundreds of his friends and patients, the Oklahoma

physician should remember these things—warn of the dangers and avoid its occurrence rather than wait for the case to develop and demand treatment.

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**Editorial Notes—Personal and General**

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DR. J. HUTCHINGS WHITE, Muskogee, is spending some time in New York.

DR. PAT FITE, Muskogee, will spend two weeks of July at his summer home in Nevis, Minn.

DR. AND MRS. CHARLES E. BAKER, Oklahoma City, visited in Indianapolis and New York in June.

DR. H. T. BALLANTINE, Muskogee, left June 24th for a ten days pleasure trip to points in Kentucky.

PHYSICIANS OF OKMULGEE entertained physicians from neighboring counties at a golf tournament, with all the trimmings, June 16th.

DR. M. P. SHY, Sedalia, Mo., Assistant Surgeon for the M. K. & T. railroad, was a guest for several days, in June, of Dr. W. P. Fite, Muskogee.

DOCTORS F. W. EWING, M. K. Thompson, and C. E. White, Muskogee, have returned from a fishing trip on the Kiamichi river, where they spent a week in June.

THE ELEVENTH ANNUAL SESSION AMERICAN CONGRESS OF PHYSICAL THERAPY will be held September 6-9, 1932, Hotel New Yorker, New York.

DR. L. J. MOORMAN, Oklahoma City, dean of the University of Oklahoma school of medicine, was elected president of the National Tuberculosis Association at the annual convention in Colorado Springs, Colorado, in June.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATION will be held Monday, September 19th, 1932, at Montreal, at the time of the meeting of the American Academy of Ophthalmology and Oto-Laryngology.

DR. F. E. WARTERFIELD, Muskogee, was elected to fellowship in the American Urological Association at its annual meeting in Toronto this year. Dr. Warterfield has been a member of this Association for many years.

GARFIELD COUNTY MEDICAL SOCIETY were guests of the Staff members of the Baptist Hospital, Enid, June 2nd, at a dinner, which was

followed by a program, during which several papers on medical and surgical matters were presented.

BRYAN COUNTY MEDICAL SOCIETY was entertained with a picnic supper at the home of Dr. B. B. Coker, Durant. Following the supper Dr. J. T. Wharton, read a paper on the "Classification of Physical Findings of World War Veterans."

CANADIAN COUNTY MEDICAL SOCIETY met June 3rd, at the Southern Hotel, El Reno. The program was given by Drs. E. D. McBride, E. Goldfain and E. Margo, of the McBride Hospital, Oklahoma City. The meeting was presided over by Dr. D. F. Stough, Sr., Geary. Program consisted of papers on arthritis and back injuries.

JACKSON COUNTY MEDICAL SOCIETY met May 3rd at Waurika. Dr. E. D. Mabry, Secretary, announced the following program:

"Specific Urethritis and Complications" by Dr. W. P. Rudell, discussed by Drs. J. R. Reed and L. H. McConnell.

"Breech Presentations Management" presented by Dr. Jesse Bird, discussed by Drs. E. S. Crowe and Knox Collier.

MUSKOGEE COUNTY MEDICAL SOCIETY was entertained with a program July 6th, arranged by the Petrolagar Laboratories, of talking motion pictures, the following subjects being shown and discussed:

"Anatomy of the Female Pelvis and Perineum."

"Salpingectomy and high Fundus amputation for residuals of Tubal Disease."

"Repair of Urethrocele, Cystocele and lacerations of the Cervix."

"Repair of second and third degree lacerations of the Perineum."

These films were prepared by Dr. Harold O. Jones, Associate Professor of Gynecology, Northwestern University, Chicago, Illinois.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION presented for its program, June 14th at Anadarko, the following:

Address of Welcome—Hon. Sam L. Wilhite, Anadarko.

Response—Dr. A. M. McMahan, Duncan.

Common Sense Management of Chronic Arthritis—Dr. E. Goldfain, Oklahoma City.

Diseases of the Thyroid Gland and Treatment—Dr. Frank H. McGregor, Mangum.

Focal Infections—Dr. G. S. Barger, Purcell.

Diseases of the Oral Mucous Membrane—Dr. C. P. Bondurant, Oklahoma City.

The Cancer Question—Dr. LeRoy Long, Oklahoma City.

Six o'clock dinner was served at the Presbyterian Church.



# ABSTRACTS « REVIEWS » COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic

714 Medical Arts Bldg., Oklahoma City

The following are abstracts of reports made at the meeting of the Paris Surgical Society (Société de Chirurgie) April 20, 1932, and published in *La Presse Medicale*, April 30, 1932.

### Two Cases of Subdural Hematoma in the Child (Deux Cas d'hématome sous-dural chez l'enfant) reported by Mondor for Fevre and Bertrand.

1. A child 4 years of age suffered a trauma of the head. After a free interval, there was coma. A trepanation on the right side disclosed a tense dura bluish in color. When incised there was escape of blood, after which the brain resumed contact with its envelope. Closure without drainage. Rapid and complete recovery.

2. In a child of 11 years coma appeared five days after trauma of the head. Evidences of pain on pressure in the right temporal fossa, oedema of the right temporal region, and a right sided Chvostek seemed to indicate localization on the right side, notwithstanding the site of the trauma was in the occipital region. Trepanation disclosed a tense, bluish, non-pulsating dura. When it was incised there was rapid escape of red blood and a number of small dark clots—followed by expansion of the brain to its normal extent. Wound repaired without drainage. Recovery.

In connection with these reports, Mondor insists that fracture of the skull in children is not as rare as it is usually thought to be and points out that extra-dural hematoma in the child is not rare.

### Subdural Hematoma (Hématome sous-dural) reported by de Martel.

A man of 38 fell on his head (une chute sur la tête), but did not quit work. Two months later there was intense headache, vomiting and psychic disturbances. A tentative diagnosis of subdural hematoma was confirmed by lumbar encephalography. After trepanation a tense, purple, non-pulsating dura mater was incised, and a voluminous hematoma occupying the entire external surface of the left hemisphere was removed. In repairing the defect in the soft structures, a drain was placed in contact with the surface of the brain. Recovery was rapid, and all disagreeable symptoms disappeared.

In closing the report, de Martel calls attention to the frequency of subdural hematoma after light trauma of the head. The development is often tardy, and seems to bear a close relation with a pathologic state of the meninges.

—LeRoy Long.

### Tuberculosis of the Pubis (Tuberculose du Pubis) by P. Fabre and Vireuque, Toulouse, France. *La Presse Medicale*, May 28, 1932.

A woman of 54 years, the mother of four children, had severe pain in the pubic region for five months with absolute functional impotence. There were two large collections having the characteristics of "cold" abscesses—one on the inner side of the right upper thigh; the other in the abdomen just above the pubis. There was irregularity, thickening and tenderness over and about the symphysis. Radiographic examination showed gross lesions of the bones forming the joint.

Treatment consisted in wide curettage of the involved bones and complete extirpation of the abscesses, including some contiguous muscle.

The authors call attention to the importance of age in tuberculous localization about the pelvis, pointing out that in the young there is frequent invasion of the acetabulum (localization acétabulaire), and in older people involvement of the symphysis pubis (localisation angulo-symphysaire) which is explained by the development of secondary centers of ossification.

The authors insist that the more frequent employment of radiography in connection with pain and distress in this region would establish the relative frequency of tuberculosis of the pubis.

—LeRoy Long.

### Malignant Tumor of the Psoas (Tumeur Maligne du Psoas) by J. P. Tourneus and Gouzi, Toulouse, France. *La Presse Medicale*, May, 28, 1932.

A young woman of 21, without antecedent history, hereditary or personal, presented an abdominal tumor the size of a fetal head, with pronounced projection into the right flank. It was smooth and fixed. A radiograph showed cecum pushed toward mid-line. The film of the tumor showed a regular and uniform shadow without evidences of bone formations. The diagnosis was enchondroma.

Operation disclosed a tumor developed at the expense of the psoas muscle. It was tightly adherent to the vertebral column and in intimate relation with the iliac vessels. Extirpation was difficult. Histologic examination showed that the tumor was a rhabdomyoblastoma.

—LeRoy Long.

### Plantar Pain in Front of the Heel—An Early Sign of Post-Operative Phlebitis—(Le Signe de la Douleur Plantaire Pre-Talonnière Pour le Diagnostic Précoce des Phlébites Post-Opératoires). By M. Le Professeur Ducuing, Toulouse—*La Presse Medicale*, May 21, 1932.

Reference is made to a description of the sign by Denecke, of Germany, in 1929.

There is pain and tenderness of the sole, about the mid-line, and just in front of the heel. It corresponds with a point where the plantar ves-

sels and nerves are crowded close together between the deep muscles and superficial flexors without much fat protection. The pain appears several days after operation—often about the time the patient is first out of bed. There is tenderness at the same point—sometimes tenderness before subjective pain.

Denecke believes that phlebitis of the leg after abdominal operations begins in the plantar veins, and assigns that as a reason for the early appearance of the sign. Ducuing does not agree with this belief, he believing that phlebitis of the leg after abdominal operation propagates from the pelvic veins—certainly a much more reasonable view.

Ducuing has not found the sign of plantar pain constant. He thinks it has importance when present, but he calls attention to certain other signs of probably much more importance—abdominal distention, late urinary troubles, oedema of the pubis, horripilation, rectal tenesmus.

Taking into consideration the relative frequency and tremendous importance of phlebitis and embolism after operation, the author emphasizes the importance of an early diagnosis, and strongly advises the complete immobilization of the leg as soon as phlebitis is suspected.

Comment: Two signs have served us well in making an early diagnosis of post-operative thrombo-phlebitis: (1) There is frequently tenderness when pressure is made in the extreme lower abdomen in the direction of the iliac vessels, and often there is subjective pain in this locality. (2) A very early and very valuable sign is the increased palpable density of the calf of the leg on the affected side when compared with the other calf. On inspection the legs may look exactly alike, but if there is a beginning phlebitis the increased density is strikingly apparent when there is simultaneous palpation of the two calves.

—LeRoy Long.

**Diverticulosis of the Appendix.** Frederick W. Mulsow. *Archives of Surgery*, Volume 24, No. 6, Page 923, June, 1932.

The author states that there are relatively few reports in the literature of cases of diverticulum of the appendix. To him this indicates that it is either a rare condition or that it is considered of little clinical importance. In the paper he states that the frequency of the condition is greater than is generally realized, and he emphasizes the possible clinical significance of diverticulum of the vermiform appendix.

He feels that the clinical significance of diverticulosis of the appendix has been underestimated. It has been said that diverticula are of little importance, since the appendix itself is a diverticulum. He disagrees with this statement. He reports 9 cases of diverticula in 661 appendices examined during the past 3 years. All except one of these cases were found in acute appendicitis. Of the 9 cases reported here, one occurred in a mucocele of the appendix, and in 3 perforation through a diverticulum occurred. In 6 there was a single diverticulum; in one there were 2 diverticula, in another, 5; and in the other, 6 diverticula. In 5 cases, the diverticulum was in the mesentery; in 2 cases they were antimesenteric; in 2 others they were in both locations. In 6 cases the diverticulum was in the distal half.

The age of the patients varied from 30 to 67, and 6 were men. There was a history of typhoid fever in 3 cases. In only one case was there no history of a previous attack or of previous intestinal disturbance.

The author feels that the presence of diverticula in an appendix may explain how, in recurring or subacute appendicitis, there may suddenly be perforation with relatively few characteristic symptoms. He feels that it is to prevent such sudden or unexpected perforation that many so-called chronic appendices are removed.

From the report it would appear that diverticula are more often than is realized the cause of sudden or unexpected perforation in so-called chronic appendicitis or recurring and acute appendicitis.

—LeRoy Long.

**Chorio-epithelioma of the Uterus.** Arthur H. Curtis, Chicago. *Surgery, Gynecology and Obstetrics*, Volume LIV, Number 6, June, 1932.

Dr. Curtis has presented here the details of a case, including beautiful colored drawings.

The most valuable part of the article, however, is a review of his long experience in gynecology, which has included only five cases of this disease, a fact which he is inclined to believe probably signifies the relative infrequency of this disease despite the idea that is sometimes gained that it is much more common.

—Wendell Long.

**Malignant Ovarian Neoplasms.** Charles C. Norris, M.D., and Douglas P. Murphy, M.D., Philadelphia, Pa. *American Journal of Obstetrics and Gynecology*, Vol. XXIII, No. 6, June, 1932.

This is an excellent short review of all the cases of malignant disease of the ovary which have been seen in the department of Obstetrics and Gynecology of the Hospital of the University of Pennsylvania. Its value lies in the careful conclusions drawn by these excellent authors, which are included verbatim because of their practical application.

1. Observations upon 153 malignant ovarian neoplasms, in 125 operated patients, and upon 93 of the latter which were kept under observation for three years or more are recorded.

2. Of 125 patients, 13 (10.4 per cent) died within thirty days of operation.

3. Of 93 patients traced for three years or more, 50 or 53.8 per cent, were apparently cured.

4. In the entire series of 153 specimens, the glandular type of ovarian carcinoma was nearly twice as frequent as the papillary type.

5. In our group of 89 follow-up patients, not including 13 who died within one month of operation, the glandular type was four times as malignant as the papillary type and the latter less malignant than the sarcomas.

6. Thirty-four and two-tenths per cent of 149 malignant tumors were bilateral. The difference between 149 and 153 specimens (conclusion, 1) is accounted for by 2 operations on each of four patients.

7. All types of tumor had approximately the same tendency toward bilateral involvement.

8. In 80 cases, bilateral involvement, regardless



of type, showed a higher three year mortality than the unilateral type.

9. When one ovary was grossly malignant at the time of operation (40 cases), the other ovary was found to be grossly benign, but histologically malignant in 17.5 per cent.

10. The percentage of three year salvage is higher following bilateral than after unilateral oophorectomy, in the proportion of 53.5 per cent to 34.1 per cent.

11. Uterine involvement of the corpus is a relatively frequent accompaniment of ovarian carcinoma; patients exhibiting this complication present an increased three year mortality. This further emphasizes the importance of a radical operation.

12. Patients with malignant ovaries, the seat of surface adhesions, removed at operation, exhibit a higher three year mortality than do those which present a smooth surface at this time.

13. Even advanced cases should receive the benefit of an exploratory section. This may be performed under local anesthesia. It permits relief of ascites, and histologic confirmation of diagnosis. By this policy occasionally supposed malignant conditions are found to be benign and such patients may be saved by an appropriate operation.

14. Bilateral oophorectomy and removal of the uterus should be the operation of choice, even though the second ovary appears to be grossly benign.

15. At the operating table all macroscopically benign ovarian tumors should be carefully examined. If necessary, when a unilateral oophorectomy is contemplated, a frozen section should be made, and everything possible should be done to exclude malignancy, before the abdomen is closed, and if malignancy is found, hysterectomy and a bilateral oophorectomy is the operation of choice.

—Wendell Long.

## TUBERCULOSIS

Edited By

L. J. Moorman, M.D.  
304 Osler Bldg., Oklahoma City

**The Incidence of Tuberculosis Infection Among Students of a High School.** Edith S. Hewitt and Rollin E. Cutts. *The American Review of Tuberculosis*, April, 1932.

This study was made in order to obtain a definite idea of the status of tuberculosis in the community and was part of the efforts being made to control its spread in Rochester, Minnesota. The group studied comprises representatives from the majority of the families in the community and gives a good cross-section of the community as a whole.

Out of a student body of 1,565, 1,328 were included in this study. Eleven and five-tenths per cent of this group gave positive reaction to the Mantoux test. Of the 34 students known to have been exposed to open tuberculosis, 61.8 percent had positive reactions. Lesions disclosed roentgenologically were few in number and not extensive. In the general group, 15.1 percent of those who gave positive tests also gave roentgenologi-

cal evidence of some abnormality which might be attributed to tuberculous infection. Of those who had been in contact with open cases, 8.9 percent gave roentgenological evidence of tuberculous lesions. No case of active or of extensive latent tuberculosis was found. Evidence of tuberculous infection, however, was disclosed. That its most serious menace is to those who live in homes where infection is present is shown by the much greater percentage of positive Mantoux tests among students from such homes as compared with the lower percentage of positive tests found in the group as a whole.

**The End-Treatment of Artificial Pneumothorax.** John Chichester Dundee. *The American Review of Tuberculosis*. April, 1932.

The scant space given to the end stages of artificial pneumothorax treatment is striking in comparison with the large amount given to the subject of this treatment. Pneumothorax workers may be divided into 2 groups: (1) sanatorium or hospital workers; (2) private or clinic physicians. The number of the latter has been enlarged greatly in recent years with the general extension of the treatment until private physicians now frequently manage the last half of the treatment. This is advantageous to the patient in many cases since the re-expanding lung is best tested in a normal environment with a normal amount of work. The sanatorium worker seeks to obtain quickly the minimum degree of collapse conducive to healing all tuberculous lesions with the least discomfort and risk to the patient, while the city worker strives to end the treatment at the proper time with equal safety. The consensus of opinion is that this involves continuing treatment for from 3 to 5 years or even longer. The description and the end-treatment of certain different types of artificial pneumothorax are presented. In two types, phrenic avulsion, in a new capacity, is advocated to help obliterate the remaining pleural space, to prevent undue stretching of pulmonary scars and to diminish mediastinal retraction. Four successful cases are reported. The practice of allowing moderate to large amounts of fluid to remain in the pleural cavity for long periods is condemned since this tends to limit the re-expansion of the lung by increasing pleural thickening, pulmonary fibrosis and atelectasis.

**Oleo thorax.** Ray W. Matson. *The American Review of Tuberculosis*. April, 1932.

Oleo thorax therapy is closely related to pneumothorax therapy but is still too new a method of treatment to be properly evaluated. It requires more technical skill, keener judgment in the selection of cases and more careful observation of patients than does pneumothorax treatment. It is indicated during the course of pneumothorax therapy under the following conditions: (1) as a disinfection oleo thorax; (2) to inhibit expansion of the lung in a threatened early obliterative pneumothorax; (3) as a compression oleo thorax to re-establish collapse or to collapse rigid-wall cavities in which an intra-pleural pneumolysis is impossible. It is contraindicated in: (1) pleuropulmonary fistula with a large opening; (2) ordinary serofibrinous exudates complicating an artificial pneumothorax; (3) as a substitute for pneumothorax in patients who are unable to undergo artificial pneumothorax;

(4) inability to maintain collapse because of too rapid absorption of gas.

Either mineral or vegetable oil to which gomenol in a strength of 1 to 10 percent is added, may be used. Mineral oil is less absorbable and less irritating so is recommended in order to inhibit expansion of the lung while vegetable oil is preferable in the toxic, mixed-infection empyemata because its rapidity of absorption permits a penetrating action of the gomenol; it also possesses great nutritive value. Since gomenol in a strength of 5 percent is capable of killing the tubercle bacillus, it is recommended in tuberculous empyemata; in mixed-infection empyemata it should be used in 10 percent solution as weaker solutions are unable to destroy mixed-infection micro-organisms.

Oleoathorax is not justified in the treatment of an ordinary pneumothorax empyema unless it tends to chronicity and toxicity since any substance, even air, when introduced into the pleural cavity, is likely to act as an irritant to which the pleura responds with an exudate-formation. For this reason oleoathorax therapy is not intended to supplant pneumothorax and should not be employed except when pneumothorax cannot serve its purpose. Oleoathorax should never be attempted in the absence of a purulent exudate without first testing the sensitiveness of the pleura to oil. In converting a pneumothorax into an oleoathorax air should be aspirated and oil introduced in units of 20 c.c. in order to avoid disturbing the intrapleural pressure; the pleura should be prepared first for higher oil pressure by preceding higher air pressures. Since reactions of many types, both early and late occur in a high percentage of these cases, great skill is required, not only in the selection of suitable cases but in their after treatment, observation, and care.

A series of 100 cases covering a period of 5 years is reported here. Disinfection oleoathorax alone or combined with inhibition or compression oleoathorax 50 cases. Results satisfactory in 60 percent; unsatisfactory in 40 percent due to pleurocutaneous fistula, pleuropulmonary fistula, reformation of purulent exudate and failure to disinfect the pleural cavity. Inhibition and compression oleoathorax 50 cases. Results satisfactory in 50 percent; unsatisfactory in 50 percent. Of these treatment was abandoned in 20 cases because of a persistent exudate formation and in 5 cases because of severe constitutional reactions.

#### Some Reasons for the Treatment of Tuberculosis Patients in General Hospitals. Arthur T. Laird and Roy M. Mayne. *The American Review of Tuberculosis*, April, 1932.

The provision of separate wards or rooms for the care of tuberculous patients in general hospitals has been urged for many years and is being successfully carried out in several large hospitals. The benefit to both patient and hospital is very great. Modern diagnosis requires much equipment found in the general hospital but not in the ordinary sanatorium as only the largest are able to afford it. The hospital supplies the need for an observation station where proper care can be provided while the patient is being studied—it also provides emergency care and prompt removal of infectious cases. One of the hospital's greatest contributions is the care of moribund patients who would receive no benefit from the sanatorium and whose presence has

a depressing effect on the other patients. Sanatorium patients frequently need hospital treatment for various reasons and modern transportation makes their transfer simple and safe. The hospital benefits in that it is constantly admitting patients with tuberculosis under other diagnoses and its personnel would be much safer were these patients correctly diagnosed so that proper precautions might be taken. By admitting and giving these patients the care to which they are entitled the hospital not only serves the general needs of its community much more effectively but keeps its beds better filled and provides this training for its interns and pupil nurses. It benefits physicians by making it possible for them to follow the patient's daily progress easily and to gain by discussions, both formal at staff meetings and informal at various convenient times—more general interest and knowledge of tuberculosis is thus created. The successful experiments of St. Mary's and St. Luke's Hospitals in Duluth in caring for tuberculous patients are reported in detail.

#### Pulmonary Tuberculosis Without Pleural Involvement Simulating Chronic Adhesive Pleurisy. Edward N. Packard. *The American Review of Tuberculosis*, April, 1932.

Four cases are reported which presented all the physical and roentgenological signs of an extensive adhesive pleurisy, two of which cleared up completely with no signs remaining, while the other two were able to take artificial pneumothorax treatment with good clinical results. The author feels that such patients should not be denied an attempt at artificial pneumothorax if it is indicated and that it should be attempted in all cases before a thoracoplastic operation is done.

#### The Danger Period in the Treatment of Pulmonary Tuberculosis. John B. Hawes, 2nd. *The American Review of Tuberculosis*, April, 1932.

Among the factors operating to prevent adequate supervision of tuberculous patients during their long period of convalescence the economic one is probably the most important. Many sanatoria have not sufficient money to employ a properly trained person to instruct out-going patients fully on the dangers of the period just ahead of them, while the regular force have insufficient time to take on such a duty; nor have the majority of patients sufficient financial resources to complete their cure properly. Ignorance and lack of ordinary intelligence are also important factors. The patient is well cared for while acutely ill and is usually fairly easy to handle during that period. He becomes, however, increasingly hard to handle as he feels better and is all too often permitted to leave the sanatorium with little understanding of his condition and only the vaguest instructions as to his future course. The city poor are cared for in the best manner at this time as they are looked up by some of the regular health agencies immediately on their return and forced, even against their will, to return to the clinic every three months. It is the well to do and those in moderate circumstances who suffer from lack of supervision for various reasons. An educational campaign, not only among the patients but among sanatorium and private physicians would be a great help in correcting this condition.



### Artificial Pneumothorax Abandoned and Re-established. Eli H. Rubin. *The American Review of Tuberculosis*, April, 1932.

The fact that pleural symphysis does not invariably occur after artificial pneumothorax is well illustrated by the case reported here. Satisfactory compression was obtained again after a lapse of almost four years. Several other similar cases have been reported and are of practical significance in artificial pneumothorax therapy demonstrating as they do that the only way to ascertain whether a pleural space is free or obliterated is to insert a needle attached to a manometer.

### Observations on Accessory Roots in Phrenic Exaeresis. Lincoln Fisher. *The American Review of Tuberculosis*, April, 1932.

Phrenicectomy has not proved justifiable in the author's experience, except that injections of alcohol possibly have some value as a brief test measure in doubtful cases. He feels that if collapse therapy is indicated at all in a given case, it should be maintained as a permanent factor of safety for the lung in question. This is especially true since dyspnoea or undesirable parenchymatous changes which occasionally occur after phrenicectomy are not prevented by temporary crushing as they occur long before the diaphragm resumes function. The small number of his cases having a crushing operation later required an exaeresis entailing not only the pain and inconvenience of a second operation but also increased operative risk and the added difficulties attendant upon more or less scar tissue in the original wound; identification of accessories and avulsion being rendered almost impossible by dense scar tissue. Since simple phrenicectomy often fails to produce complete or permanent paralysis of the hemidiaphragm due to accessory phrenic roots, it is of great importance to identify and resect all such branches or roots. This does not ordinarily require an appreciably larger incision altho it does take more time.

In 36 phrenic exaereses, one or more accessories were found in 22 cases or 60 percent. Five had multiple accessories, four being the greatest number found in any given case; in 8 an accessory accompanying the nerve to the subclavius was found and resected. In one case a double phrenic was present, the two being of equal calibre, crossing the scalenus anticus and passing beneath the clavicle without uniting. Before exaeresis of the main-stem, resection of all accessory roots passing separately beneath the clavicle is suggested, as an aid to avulsion and as an additional safeguard against injury to the subclavian vessels. In this series 24 phrenic nerves or 66.6 percent were completely avulsed by this method, the greatest length being 44 cm, the shortest 10 cm. Complete paralysis and elevation of the diaphragm resulted in every case.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

### Leg Ulcers of Unrecognized Etiology. Norman J. Kilbourne, *Jour. A. M. A.*, June 4, 1932.

A series of 150 cases of chronic leg ulcers is cited. He divides the etiological factors into 6 groups namely, metabolic, circulatory, infectious,

drugs, neurotrophic, and malignant. Under infectious are placed Wassermann-positive, and Wassermann-negative, mycotic and tuberculous. Eleven cases were diagnosed as Wassermann-negative, and nine of these had the diagnosis established.

He states that the diagnosis of syphilitic leg ulcer may be extremely confusing, clinically serologically, and roentgenologically. Typically, leucic ulcers are painless, punched out, have irregular borders, and are located on the lateral aspect of the leg. The author states he has found these ulcers in various locations, without typical syphilitic configuration painful from the start, but heal rapidly after antisyphilitic therapy. Radiography is confusing at times, many non-syphilitic ulcers show extensive periostitis not only immediately beneath the ulcer but along the whole shaft of the tibia, resembling a saber-shaped tibia. Serologically it must be remembered that a negative Wassermann means nothing. Seven out of seventeen of his cases had a negative Wassermann. Little aid has come from a provocative Wassermann. He has had two patients with a positive Wassermann to respond when the underlying cause was removed, as invisible varicose veins. He outlines a simple therapeutic test which is reliable, consisting of injections of Bismuth compounds, intramuscular injections of milk, and sodium iodide by mouth. Syphilitic ulcers show marked improvement. Arspheanines are not reliable for cure in this type of tertiary syphilis. Every chronic ulcer not explicable on other grounds should receive this therapeutic test. He calls these ulcers Wassermann negative rather than leucic, due to the fact that the action of the iodides on the thyroid and the thyroid on the skin is somewhat known, also there may be non-specific action of the bismuth compounds on these ulcers.

### Pulmonary Syphilis. Adolph Hartung, M.D. and John Freedman, M.D., *Chicago, Ill. Jour. A. M. A.*, June 4, 1932.

A diagnosis of pulmonary syphilis is generally regarded with a good deal of skepticism. Carrera in a careful post mortem study of 152 known luetics found 12 cases of undoubted anatomical syphilis of the lung. In 29,680 routine post-mortems Erickson found but 19 cases of lung syphilis, and in 240 autopsies he found 28 cases of lung syphilis. The author states that lung syphilis is never primary, but only incidental to the widespread ravages of the disease. Ultimate diagnostic proof in most cases is not made; in a great majority of the cases reported the diagnosis is based on clinical findings. In arriving at a diagnosis the following criteria should be followed:

1. History of syphilis chancre, muco-cutaneous lesions, cardio-vascular lesions, stigmata of syphilis, miscarriages and stillbirths.
2. Repeated examinations of the sputum to rule out tuberculosis, mycotic infections, and other spirochetal infections as Vincent's infection.
3. Signs and symptoms of stubborn, progressive pulmonary lesion. In lung syphilis the signs are marked while the symptoms are mild.
4. Demonstration of spirochetes pallida, (very rare) in dark field of specific stain.
5. Serological examinations. When positive,

they indicate the presence of syphilis, but do not mean that a pulmonary lesion is Luetic.

6. Roentgen examinations. When these show chronic pulmonary disease involving the roots, middle lobe or base of the lung in a patient with unquestionable evidence of syphilis, and in whom Tuberculosis has been ruled out by every available means, the possibility of syphilis of the lung should be given consideration either alone, as a complication, or as a coexistent condition.

7. Therapeutic test. Improvement under anti-syphilitic treatment is contributory evidence in its favor but is by no means absolute. This is the deciding factor in the clinical diagnosis. General clinical improvement, disappearance of symptoms, as well as clearing up of the lesion.

8. Anatomic confirmation: when possible this should be done; demonstration of syphilitic changes the nature of which there can be no doubt.

In this article there is much information on the roentgen evidence of lues of the lung, he states that the roentgen examination is of the utmost importance in the differential diagnosis, especially in eliminating other conditions, also that there is nothing that can be said dogmatically in regard to the roentgen appearance of pulmonary syphilis.

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Don't be content to make a diagnosis of gonorrhea just because the patient says he has it and when you see a discharge from the urethra. Stain a specimen of that discharge by Gram method, examine it microscopically, and see whether Gram negative intracellular diplococci are present; many discharges are caused by chemical irritation.

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Don't give a patient a prescription for medicine and tell him to get a syringe and treat himself without first carefully teaching him just how to treat himself. Many serious complications follow self treatment.

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#### Ophthalmologic Importance of Focal Infective Prostatitis. P. S. Pelouze, Phila. Arch. of Ophthalmology, March 1932.

The author states that 35% of all males beyond 35 years of age have prostatitis, and that 72% of all males with focal infective symptoms have prostatitis. Eye conditions are frequently due to infections of the prostate, and are kept up by this condition. He mentions the triad of conditions most frequently found as focal points, teeth, tonsils, and prostate, and in addition the nasal accessory sinuses. Increase in symptomatology of the eye condition follows manipulation of the prostate gland when it is the seat of the infection, and the author warns against too vigorous treatment of the focus, that it is analogous to the vaccine reaction with marked specificity for distant lesions. The treatment directed to the prostate should be governed by the tolerance to the toxins liberated. He states that prostatic massage should not be carried out oftener than twice per week, and not repeated within three days of the subsidence of the reaction caused by the previous treatment.

#### Grapes and Urinary Acidity. Editorial, Jour. A.M.A., May 28, 1932.

The reaction of the foods we eat is no criterion of their behavior in metabolism. Citrus fruits, acid in reaction, which is caused by organic acids as citric acid, when oxidized in the body, as a rule, leave a residue of basic ingredients to be disposed of by this body. It is possible thus to bring about with acid fruit juices metabolic consequences just as marked as those induced by alkaline sodium bicarbonate. Sodium citrate is used in place of sodium bicarbonate to induce alkalization. Protein foods and cereals as a rule give rise to acid end products, while vegetables are potentially alkaline, thus acidosis and alkalosis can be combated by the ingestion of potential acid or alkaline foods. Herbivorous animals normally have alkaline urine, while carnivorous animals have acid urine. Blatherwick and Long have reported that even when large amounts of orange juice (acid) are ingested there is a production of alkaline urine, that it is impossible to over-reach the organism's ability to oxidize the contained citric acid even with 48 gms of acid equivalent. Organic acids occur in foods which are not so readily oxidized. Oxalic acid is an extreme illustration. Tartaric acids have been reported to exhibit resistance to oxidation. Grapes are rich in tartrates, thus there has been some doubt as to the behavior of grapes from the standpoint of their potential reaction in the body. Saywell of the University of California College of Agriculture at Berkley has reported on this, which included persons on a control diet and on the same basal regimen supplemented by grapes, fresh natural grape juice, detartrated grape juice, natural grape juice concentrate, concentrate-tartrate mixture, Thompson's seedless raisins, and Muscat seeded raisins. Increase of urinary hydrogen ion concentration occurred from 0.8 to 1.2 units. Decrease in ammonia secreted and a corresponding decrease in total acidity. A correlation of the alkalinity of ash and the physiologic reaction was apparent. Grapes and grape products with the greater alkalinity of ash were associated with a more basic body reaction. 90% or more of the organic acids ingested in grape products were oxidized in the body as a rule, thus grapes and their products behave like many other fruits in the body. The physiological advisability of their continued use in large quantities over long periods of time is open to question.

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#### Hunner's Ulcer. A. I. Folsom, Dallas, Texas State Journal of Medicine, February 1932.

The author states that this name is probably a misnomer, this condition has been called ulcer, pan-mural cystitis, interstitial cystitis, et cetera. It is characterized by a chronic inflammatory process involving the submucous layers of the bladder wall, including the submucosa proper, and the various muscular layers. No organisms have been isolated from the ulcers. The walls of the bladder are thickened, yet the mucous membrane is involved little, and for this reason the condition is extremely hard to recognize. Etiology is not known. Hunner suspected focal infection, yet the author states that this condition is found more frequently in women and thus he doubts this etiological factor. The symptoms are quite characteristic, diurnal and nocturnal frequency and urgency of urination. Catheterized, specimen does not reveal any marked



change except perhaps an occasional red cell, a sharp knife like pain located anywhere in the region of the pelvis, this is worse when the bladder is distended or there is a jolt to the pelvis as in riding. The cystoscopic examination may not reveal any abnormality, orifices normal, mucosa normal, until you search the dome carefully and see a tiny speck which enlarges on distension, and on manipulating this excruciating pain is revealed. The author states that fulguration, over-distension, and resection are the remedies to be tried.

## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
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**Conditions of Delirium.** Prof. H. Krisch, Psych., Univ. Clinic, Greifswald. (*Fortschritte der Therapie*, No. 2, 1932). *Abst. Ars. Medici*, 10: 205, May, 1932.

Conditions of delirium occur most frequently with cerebral arteriosclerosis, diseases of the kidneys, infectious diseases (typhoid fever, pneumonia, meningitis), intoxications (alcohol), severe trauma of the head and sepsis. Treatment of the fundamental disease is, of course, of the greatest importance; in practice, however, it is often necessary to proceed symptomatically and, first of all, to calm the patient. For this purpose the author makes the following suggestions. To prevent the patient falling out of bed, the latter should be protected by padding at the sides or a hammock stretched over it. The "strait-jacket", a canvas coat with very long sleeves, the free ends of which can be knotted at the back, has unfortunately fallen into disrepute although it is a very gentle method of preventing restless patients harming themselves. If a patient has any dressings, after operation for instance, which he might tear off, mittens are very practical. As raving patients easily abrade their skin, the latter should be greased. With patients suffering from infectious diseases, febrifuges (possibly lukewarm baths) will have a soothing effect. Since motor excitement greatly exhausts the physical strength the patient should have plenty of nourishment and, especially, an ample supply of fluid (hypertonic sugar solution); cardiac stimulants should be given from the beginning of the delirium. Special value should be attached to cardiac stimulants in "delirium acutum" (highest degree of psychomotor excitement) as it is just with such hyperkinetic conditions that sudden deaths occur. Of medicinal means for soothing the excitement Luminal (up to 0.3 gm.) is most suitable; it must, however, be discontinued immediately if the dirty red exanthema due to Luminal develops. In cases where the motor excitement reaches such a degree that nursing becomes difficult or that the patient's life, already weakened by the fundamental disease, is endangered, hypodermic injections of Scopolamin must be resorted to. This remedy is usually given in too small doses by physicians who are not alienists; in order to be certain of the effect it is necessary, with an adult male, to inject 1 mg. hypodermically. The maximum dose in a day is 3 times 1 mg., in the daily practice of psychiatric clinics it is, however,

frequently exceeded without harmful effects. In order to raise the potency of the effect of Scopolamin, 0.01 gm. morphine may be added unless the respiratory centre is already impaired by the fundamental disease. Further, as unconscious persons have, in any case, an inclination to the retention of urine, there is additional need for great caution in the use of morphine. No unfavorable results have been experienced from Scopolamin in cases with weak hearts. With extreme conditions of delirium it is advisable to transfer the patient to a psychiatric department where the nursing staff knows by experience how to deal with excited patients so that less compulsory measures need be used than in other departments.

**Psychiatric Reactions from Dysinsulinism in a Diabetic.** Cronin, H. J., *J. Nerv. & Ment. Dis.* 74: 478. 1931.

In the successful treatment of any organic disease the psycho-physical organism as a whole must be considered rather than the isolated treatment of the symptoms relating to one organ. In the case described there was a general constitutional inferiority with glandular, ophthalmic, neurologic and psychiatric symptoms. The patient was a student 22 years of age of the asthenic type who complained of mental confusion, examination anxiety, inability to concentrate, memory difficulties and physical weakness. She was over-conscientious, hypercritical, and unfriendly toward associates. At times of stress in college she developed eye symptoms which were unrelieved by refraction or treatment. Some months previous to examination she developed a series of skin infections that required surgical treatment. Concomitant with the skin infections, she was mentally confused, repeated words in a stereotyped manner and complained of insomnia. Physical examination revealed an old arrested tuberculosis, glycosurea 2½%; and blood sugar 200 mm. She was 24% underweight. Diabetic therapy was carried on with psychotherapy. When the patient increased her insulin or decreased her carbohydrates she had a return of the ophthalmic and psychiatric reactions. After one particular self-administered injection, she had an attack of mental excitement of four hours' duration in which diplopia was the first symptom. Then followed localized areas of anaesthesia, mental confusion, irrational behavior and assaultive attacks. After the height of the attack had lessened, she was elated and unrepressed. In this attack there was a reversal of her usual character traits with belligerency, aggressiveness and expression of repressed erotism. Following the attack she became again quiet and docile. As the patient was observed over a period of months there was some improvement in the diabetic but there was a gradual loss of effect toward the environment with listlessness and a slight degree of mental deterioration.

—Author's Abst.

**Osseous Diseases and the Parathyroids.** (*Maladies Osseuses et Parathyroides*). Snapper, I., *Ann. de Med.* 29: 201. 1931. *Abst. Endocrinology*. 16: 330. 1932.

A detailed description is given of a severe case of osteitis fibrosa (von Recklinghausen) in which removal of a parathyroid adenoma was followed by re-calcification of the skeleton and symptomatic improvement which practically amounted

to a cure. In this and other cases reported in the recent literature, a negative calcium and phosphorus balance has indicated by excessive urinary excretion of calcium and phosphorus. The serum calcium has been high and the serum phosphorus below normal, conditions exactly opposite to those found in parathyroid insufficiency. The pathogenesis of this disease is thus clearly based on parathyroid overfunction. Biochemical examination of eight cases of osteitis deformans (Paget's disease) and one of Leontiasis ossea revealed normal serum calcium and serum phosphorus and normal urinary excretion of calcium and phosphorus in all. The operative recovery of normal appearing parathyroid glands from two of these cases was without influence on the course of the disease. While many pathologists, basing their opinions on anatomical features, consider that the skeletal disease of von Recklinghausen and that of Paget's are intimately related, it is evident that striking differences exist clinically, biochemically and in their respective pathogenesis.

**Hyperthyroidism Associated with Parkinsonian Syndrome.** Wechsler, I. S. and N. Savitsky, J. A. M. A. 97: 1283, 1931. Abst., A. M. A. Abst. Endocrinology. 16: 335, 1932.

The authors note that the association of exophthalmic goiter with paralysis agitans is comparatively rare. Most of the cases reported in the literature show that the association is an accidental one. In the majority of instances the hyperthyroidism preceded the onset of the Parkinsonian syndrome. In recent years, attention has been called to the presence of signs and symptoms referable to the vegetative nervous system in acute and in chronic encephalitis, which have a predilection for the basal ganglion-mid-brain regions. But even before the involvement of the hypothalamic vegetative centers was recognized as the cause of metabolic and other disturbances, the sympathetic system was believed to be affected in exophthalmic goiter and to bear some relation to it. More recently, the suprarenals, the medulla of which is of the chromaffin sympathetic system, have been shown to stand in definite causal relation to hyperthyroidism. From time to time, suggestions have been made that physiologic or pathologic disturbances in the vegetative centers of the inter-brain may have something to do with the production of many syndromes previously regarded as independent disease entities. The question, too, has been raised whether, in a syndrome such as hepatolenticular degeneration, the disease of the liver causes the changes in the brain, or, conversely, the involvement of the striatum leads to secondary disturbances in the liver. In encephalitis it has long been known that what may be regarded as dysthyroid symptoms were frequently a part of the clinical picture, even though there was no true exophthalmic goiter. The speculation is also justified as to whether the tremor of hyperthyroidism is not in effect the result of secondary changes in the striatum. In view of all this, the question now arises whether exophthalmic goiter may not in some way be the result of some altered physiologic state or pathologic change of the hypothalamic vegetative centers. The proximity of these structures to the regions affected in paralysis agitans and the occurrence of hyperthyroidism with Parkinsonianism in two cases reported by

authors in which the one syndrome preceded the other may possibly furnish clinical confirmation of theoretical views. In any event the cases, aside from their speculative interest, are worthy of record because of their clinical rarity. Of clinical interest in both the cases was the difficulty in dissociating the hyperthyroid from the Parkinsonian tremor. The former is much finer and more rapid, but it overlaid the coarser and slower oscillations of basal ganglion origin. The improvement following thyroidectomy subtracted, as it were, the overtone of tremor and improved the underlying basal ganglion syndrome to some extent. But it may well be said that the thyroïdal tremor is in reality of basal ganglion origin and caused by toxic changes in those structures. It is interesting, too, that the surgeons hesitated to operate, and it was only after urging by the neurologist and assurance that the paralysis agitans in itself was no contraindication that operation was performed.

**The Influence of Stimulation of the Hypothalamus on the Activity of the Hypophysis.** Dr. I. P. Karplus and Dr. O. Peczenik. Proceedings of German Neuro. Society, Abst. Arch. Neuro. & Psychiat. 27: 967, April 1932.

After stimulation of the hypothalamus the cerebrospinal fluid shows a change in biologic characteristics: The pituitrin-like effect of the fluid on the guinea-pig uterus is increased. This change is due to a pouring out of pituitrin as a result of the stimulation. It was also found that this outpouring of pituitrin does not depend on stimulation of the cervical sympathetic or on a general stimulation of the animal, but that it is the direct result of the stimulation of the hypothalamus. It was shown also that the increase in the pituitrin is not secondary; it does not come from the blood. Apparently the hypothalamus possesses a hormone that regulates the mechanism of the hypophysis.

**The Relation of the Sympathetic Nervous System and Generalized Lymphoid Hyperplasia to the Pathogenesis of Exophthalmic Goiter and Chronic Lymphatic Leukemia.** Friedgood, Harry B., Am. J. Med. Sciences. 183: 841. 1932.

Exophthalmic goiter and chronic lymphatic leukemia are both characterized by an increased basal metabolism. The clinical symptoms of the two diseases are strikingly similar. There is a widespread lymphoid hyperplasia in Graves' syndrome somewhat comparable to chronic lymphatic leukemia, which the author states has not received sufficient attention. He calls attention to the predominance of the signs and symptoms of sympathetic nervous system hyperactivity in these maladies and suggests that this system plays a role of paramount importance in their pathogenesis. In his discussion he states that, though chronic lymphatic leukemia and exophthalmic goiter appear to be wholly unrelated clinical syndromes, careful investigation indicates that a striking and fundamental parallelism exists between these two syndromes. His summary and conclusions are as follows: Lugol's solution has a strikingly parallel effect upon the clinical phenomena of exophthalmic goiter and chronic lymphatic leukemia; and, conversely, does not ameliorate the signs and symptoms of true hyperthyroidism induced by the ingestion of active



thyroid substance. These facts, in addition to the similarity which exists between the clinical picture and pathology of chronic lymphatic leukemia and exophthalmic goiter, indicate that these maladies are primarily independent of thyroid dysfunction. Exophthalmic goiter is probably not due to a hyperthyroidism, and its elevated basal metabolic rate and tachycardia seem to be independent of a hypothetical hypersecretion from a hyperplastic thyroid gland.

The sympathetic nervous system and the lymphatic system play a significant role in the pathogenesis of exophthalmic goiter and chronic lymphatic leukemia; and the effect of iodine is probably intimately related to the pathological physiology of the sympathetic nervous system.

## BOOK REVIEWS

**GENERAL SURGERY, The Practical Medicine Series.** Edited by Evarts A. Graham, A. B., M. D., Professor of Surgery, Washington University School of Medicine; Surgeon in Chief of the Barnes Hospital and of the Children's Hospital, St. Louis, Series 1931. Cloth, Illustrated, 804 pages, Price \$3.00. The Year Book Publishers, 304 South Dearborn St., Chicago.

Annually the Year Book Publishers issue eight volumes, reviews of current literature of the last year, on certain specialties. This one devoted to surgery is issued by one of the masters in surgery of the century, Graham. To the busy surgeon this work will undoubtedly appeal, and as often the general practitioner must recognize earlier conditions which may demand prompt surgery, the volume should also appeal to him.

**WHITE HOUSE CONFERENCE ON CHILD HEALTH AND PROTECTION.** Printed by Century Company, 353 Fourth Avenue, New York.

The results of this conference have been set forth in a series of volumes covering the following:

"Nutrition Service in the Field", \$2.00. "Body Mechanics: Education and Practice," \$1.50. "Psychology and Psychiatry in Pediatrics: The Problem", \$1.50. "Health Protection for the Pre-school Child", \$2.50. "Growth and Development of the Child", \$4.00. "Obstetric Education", \$3.00.

These are a valuable contribution on the care of the child and mother. Space forbids a complete review and analysis of them, but the outstanding and important array of speakers and renderers of papers make of them an authority not to be disregarded by those interested in this type of work.

**SURGICAL CLINICS OF NORTH AMERICA.** (Issued serially one number every other month). Volume 12 No. 2, (New York Number, April, 1932). 306 pages with 84 illustrations. Per Clinic year (February, 1932 to December, 1932). Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

Among the interesting contributions in this issue are: "Chest Wall Defect with Bronchial Fistula" by Howard Lilienthal. Operations on

close these are always difficult, as to offering permanent cure. "Preoperative and Postoperative Care" is presented by John F. Erdmann. Both pre and postoperative care are often of more importance than the mere operation itself, therefore they cannot be too much considered. Too many of us grow into careless and slovenly habits in this respect. "Fractures at the Lower End of the Humerus in Adults", always dangerous as to prognosis is presented by James M. Hitzrot. "The Clinical Application of Biological Endocrine Tests" by Robert T. Frank, contains among other interesting matters a short description of various pregnancy tests; the Aschheim-Zondek, Friedman, and the Frank-Goldberger tests. All depend upon injection of blood from the suspected pregnant person into immature mice, rabbits, etc. "Salivary Gland and Duct Calculi", is presented by Russel H. Patterson. "A Clinic in Reparative Surgery, Examples of Treatment of Keloids, Unilateral Facial Paralysis, and of The Various Applications of Skin Grafts" is presented by J. Eastman Sheehan. His idea of scars as to keloids lies in light approximation of the cut surfaces over a tube containing radium emanations, this on the theory that keloids are caused by an overplus or retained collection of undrained lymph at site of operation. J. William Hinton presents histories, analysis and treatment of G. I. cases under the title of "The Selection of Patients for Operation with Gastric and Duodenal Ulcers." Charles Gordon Heyd presents "Jaundice" definition, explanation of the underlying chemistry and pathology, classification based on Bilirubin determinations, and the significance of the Van den Berg test.

The volume contains much other fine material but above gives a good index of its high class.

**AN EXPERIMENTAL AND CLINICAL STUDY OF PAIN IN THE PLEURA, PERICARDIUM AND PERITONEUM.** By Joseph A. Capps, M.D., Professor of Clinical Medicine, University of Chicago, with the collaboration of George H. Coleman, M.D., Assistant Professor of Medicine, Rush Medical College. A Foreword by Anton J. Carlson, M.D., Ph.D., Chairman of the Department of Physiology, University of Chicago. Cloth, illustrated. 99 pages, Price \$3.00. 1932. The MacMillan Company, New York.

The objection to this book is the fact that it contains no index, however one hundred pages may soon be digested. Pain is a symptom. When the patient complains of a pain it is up to the doctor to interpret the reason or cause of pain and therein lies difficulty. Pain in the right side (wrongly diagnosed as appendicitis—there may be rigidity, high blood count, etc., yet the entire trouble may be caused by a ureteral calculus). Some pains are almost pathognomonic of the trouble and point directly to the cause. Pain in the abdomen and chest are often very deceptive. The author once operated on a man for appendicitis, a question mark being behind the diagnosis. The appendix was perfectly normal, but the man died shortly thereafter from a severe heart condition and the pain was caused by an atheroma of the abdominal aorta. Pain in the chest is very deceptive and calls for a wide range of elimination. It may be due to anyone of the various pneumonias, a heart lesion or simply to an affection of one of the intercostal nerves. Of course there are other causes for

pain in the chest, but a pain in the pericardium, or region of the abdomen may be pointers to serious conditions, on the other hand vague and indefinite pain in the toes and feet; one may be dealing with a beginning of thrombo-angitis obliterans or Buerger's disease. I have known such cases to be long overlooked; unfortunately there was not much to do for them after discovery, but there is some satisfaction in knowing early what you were dealing with.

This is a valuable little book.

#### BIOCHEMISTRY IN INTERNAL MEDICINE.

By Max Trumper, Ph.D., Clinical Chemist and Toxicologist; formerly in charge of the Laboratories of Biochemistry of the Jefferson Medical College and Hospital and of the Psycho-Biochemistry Laboratory, Graduate School of Medicine, University of Pennsylvania, Philadelphia, and Abraham Cantarow, M.D., Instructor in Medicine, Jefferson Medical College, Assistant Attending Physician, Philadelphia General Hospital; in charge of Laboratory of Biochemistry, Jefferson Hospital. With a foreword by Elmer H. Funk, M. D., Sutherland M. Prevost Professor of Therapeutics at Jefferson Medical College. 454 pages with illustrations. Philadelphia and London. W. B. Saunders Company, 1932. Cloth, \$5.50 net.

The growing importance of blood, urinary and other examinations in various diseases has for the last few years more steadily impressed itself upon all physicians and surgeons than decades heretofore. Renal and hepatic function are of such high importance, if a correct prognosis and treatment is to be followed that knowledge of chemistry involved is absolutely essential. This work considers the various phases necessary to an understanding of these problems.

(MYOCARDITIS)... By Don C. Sutton, M.S., western University; Attending Physician, Cook County Hospital; Chief, Cardiac Follow-up Clinic, Cook County Hospital, Chicago, and Harold Lueth, Ph.D., M.D., formerly Instructor Physiology, Northwestern University, Chicago. Illustrated, Cloth, 164 pages. Price \$5.00. The C. V. Mosby Company, St. Louis, 1932.

Too often the diagnosis and statement to the patient that "you have heart disease" carries with it, due to misinformation and custom of ages, virtually a death sentence or at least permanent invalidism. It is well to see that Sutton and Lueth take the sensible and optimistic view of even so dangerous a thing as "Coronary Disease" (Myocarditis). Of course, they are dangerous conditions, but apparent miracles may result from an early diagnosis and proper after care and treatment. It should be said in consideration of these patients that his first enemy is his thoughtless friend who futters along on

the side lines, making life one continuous round of unpleasantness and misery.

This monograph should be considered with high favor by the medical profession.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, Third Series, Volume Fifty-three. Issued at Philadelphia and printed for the College in 1931.

These volumes are issued annually by the College of Physicians together with much historical as well as personal data on physicians and the pick of various papers read before meetings of the College during the past year. It also contains the transactions of the College in general.

Among the articles noted are: "Nonspecific Protein Therapy in Surgical Conditions" by Lee Rademaker; this is discussed by John H. Gibbon and Damon B. Pfeiffer. "A Community Health Program" is presented by C. E. A. Winslow. Joseph V. Klauder presents "Recent Experimental Contributions to Syphilis"; John A. Kolmer, presents "Recent Developments in the Serology of Syphilis"; Carroll S. Wright, "Bismuth in the Treatment of Syphilis"; J. Frank Schamberg, "Fever Therapy in the Treatment of Syphilis"; Arthur G. Schoch, presents "Newer Arsenicals in the Treatment of Syphilis"; Vaughn C. Garner, presents "The New Conceptions of the Diagnosis and Treatment of Early Syphilis"; Donald M. Pillsbury, presents "The Prevention and Treatment of Prenatal Syphilis"; John H. Stokes, presents "Syphilis as a Problem in Preventive Medicine".

This aside from many other articles in the volume is a tremendously strong series of articles on syphilis.

#### THE EXPECTANT MOTHER'S HANDBOOK.

By Frederick C. Irving, A.B., M.D., Professor of Obstetrics, Harvard Medical School Visiting Obstetrician, Boston Lying-In Hospital. Illustrations, Cloth, 208 pages. Price \$1.75. 1932. Houghton Mifflin Company, Boston and New York.

The care of the expectant mother is of the greatest importance. This book is more for the information of the mother than for the physician, so, after the physician has digested it he may deem it worth while to recommend it to his patient.



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### ACTIVE IMMUNIZATION AGAINST DIPHTHERIA—THE NEED FOR IMPROVEMENT OVER PRE- SENT METHODS OF AT- TAINING IT\*

FRANK C. NEFF, M.D.  
KANSAS CITY, MO.

While there is a steady improvement in the technical details and production of active immunization, we find that most communities are still in the propaganda stage of diphtheria prevention and have about reached the limit of their possibilities by the methods which have hitherto been employed. Improvement in technic and material are made from time to time and these may not reach the public through such agencies as are now in charge of immunization. Instead of the routine administration of toxin material in identical doses to children lined up in a clinic, it would seem that the child should be given individual consideration. Public propaganda may still be necessary to stimulate willingness to have children "vaccinated" against diphtheria, but under ordinary conditions in this country public administration of toxin antitoxin or toxoid is not necessary, not so effective nor careful, nor desirable. I hope to bring out the reasons for my opinions in this paper.

Immunization to a disease requires a careful use of methods which have been scientifically worked out. The individual child may have acquired an immunity naturally. The Schick test requires the utmost care in the preservation of the solution, its administration and its interpretation. Because an individual in early life may not retain his immunity, and because certain children require more than the standard number of doses, it is necessary that Schick testing or that a repetition of injections be made when indicated.

All children given active immunization should be tested afterwards, because a

certain percentage are not protected by a short series of injections. Authorities private or public are not warranted in declaring children safe from the disease unless a physician with experience has seen that a truly negative reaction to intradermal toxin solution is present. Ramon said that the prevalence of diphtheria bears direct relation to the number of individuals showing a positive Schick test.

*Refinement of Methods.* Both the immunizing material and methods are becoming more effective and refined. The increase in the antigenic property of the toxin solution is evident to all who are familiar with the earlier experience of active immunization.

In 1913 Von Behring found, as a result of animal experimentation, that antitoxin would neutralize diphtheria toxin sufficiently to be safely administered to persons and that immunity could be produced thereby. Enough time has now elapsed to know that permanent immunity is thus produced, which becomes augmented by contact with carriers of the disease, with the advancing age of the individual.

Toxin-antitoxin has been changed in its strength until now one c.c. contains underneutralized toxin sufficient for 0.1 L dose for the guinea pig.

Looking for a method of giving more effective doses of toxin without causing a dangerous or severe toxic reaction, Ramon in 1923 brought out his method of modifying the toxin by the addition of 3 or 4 per cent solution of formaldehyd, the mixture then being incubated for 4 to 6 weeks at about the body temperature. The immunizing factor is saved by these methods. It is non-toxic and at the same time more antigenic. It goes by the name of Ramon's anatoxin and by the distributing name of toxoid. It has recently been stated by Binney<sup>1</sup> that the formation of

1. Binney, Wm. E.: Action of Formaldehyd on Diphtheria Toxin., J. Immunol. 20:47 (Jan.) 1931.

toxoid when mixed with formaldehyd solution is not due to a direct action of free formaldehyd upon the toxin, but that a

\*Read at meeting of Oklahoma State Medical Society, Tulsa, May 25, 1932.

compound is formed with amino-acid. Toxin containing not less than 400 minimal lethal doses per cubic centimeter is used in preparing toxoid. It is detoxicated by moderate heat for several weeks as above mentioned. It is tested both for its ability to neutralize toxin in the skin and also against five fatal doses of toxin for the guinea pig.

Krause's preparation, described in Vienna in 1927, is said to have the ability to immunize in 40 days, and is administered within a period of 8 days, three doses, 3 days apart.

Unless Schick testing is done and performed carefully it would be better to increase routinely the dosage of toxin-antitoxin or of toxoid to five of the toxin-antitoxin or four of toxoid for public administration. But it seems to me that the physician, or even the public agencies which should confine their activities to the indigent, should do skin testing and thereby know when an individual is protected.

In the cases of children under five years of age, it is well for the physician to retest such patients once a year or at least each time that diphtheria has appeared in the community.

I am in favor of each County Medical Society holding a Schick test clinic each year, for the destitute children of the county and immunizing those that need protection. If we wish to have the work done in the best way it will be in private practice.

DIPHTHERIA IN KANSAS CITY FOR TWO SERIES OF YEARS

Year	No. Cases	Deaths	Year	No. Cases	Deaths
1920	568	44	1928	151	18
1921	1221	81	1929	175	18
1922	592	61	1930	218	16
1923	516	40	1931	281	16

In spite of the fact that free immunization is urged upon the families of Kansas City whether there is a family physician or not, you will see that we still have usually above 200 reported cases a year and an almost uniform number of deaths, about 16 to 18. There are of course cases that are not reported and not diagnosed.

In the Canadian cities along the border, the occurrence of diphtheria was recently found to be 40 in 5,000 non-immunized children or one to each 125 children. In 3750 children given toxoid, only four cases of diphtheria appeared.

In the last few years we have been seeing some cases of diphtheria at the Isolation Hospital in Kansas City who had been

given toxin-antitoxin in the school or clinic, and who were not thereafter Schick-tested. Probably not all got three doses, and from what we shall see today, further doses of toxin-antitoxin or toxoid will immunize about every susceptible child, two doses and sometimes three doses are not therefore sufficient in all cases.

225 CHILDREN GIVEN TOXOID IN PRIVATE PRACTICE

Ages of Children When Toxoid was Given

12 months or under	53
13 to 24 months	58
25 to 36 months	26
37 to 48 months	19
4 years	12
5 years	23
6 years	14
7 years	6
8 years	6
9 to 13 years	8

Only 48 of these children had been Schick-tested before given the toxoid: there were 177 children given the toxoid without knowing how many were susceptible. This is the way it is usually done.

169 children were given Schick test after toxoid.

Of these 151 were negative to Schick after 2 doses of toxoid or 89 per cent. 18 were negative to Schick after 4 doses. 169 or 100 per cent were negative after 2 to 4 doses.

Length of time after toxoid was given until Schick test was done—169 Cases:

6 weeks	27
2 months	38
3 months	44
4 months	26
5 months	12
6 months	6
7 months	2
8 months	2
9 months	3
10 months	2
1 year	6
6 years	1

It has been my custom to arrange a Schick testing day on Saturday as often as we have enough cases who may be ready to test. You will notice that they begin coming in at 6 weeks and the largest number comes in at 2 and 3 months. For various reasons some infants are never brought back, although the family has been informed that a Schick test after the toxoid will not have any extra cost attached to it.

When a preliminary Schick test is hyperactive as shown by a persistent large, deeply pigmented, desquamating area at the end of 5 to 7 days, it is well to give two extra doses of toxin-antitoxin or an extra dose or two of toxoid in the series of injections. Such children especially need to have their development of re-



sistance checked during the following months at 6 weeks, 3 months and 6 months.

The Dicks believe that the Ramon diphtheria toxoid in 3 doses immunizes better than the toxin-antitoxin with its O. 1 L+ dose, even in 5 doses. In France toxoid is used at all ages,

Schwartz, of Milwaukee, uses a third dose of toxoid at the end of 6 months to those children who are still positive reactors.

The French as well as the Canadians now give 3 doses of toxoid. This makes more probable the completeness of the immunization.

In the first five years of life, immunity may not be constant. Even if active immunity had been induced, with a resultant skin test, one must not take it for granted in early childhood that a tonsillitis or laryngitis is not diphtheritic, for susceptibility may have returned. I have had that happen in a doctor's family. One will get help from a Schick test in such an instance. A culture from the throat may be of assistance. If there be a laryngeal stridor a dose of serum is advisable.

Sensitization by the small amount of horse serum in toxin-antitoxin is possible but not common. Recently, a child to whom I had given toxin-antitoxin at 2 years of age, later had the problem arise of needing antitoxin against tetanus, a serum which is very apt to cause a reaction. In such cases it is well to first give an intradermal test of 1 to 10 dilution of the serum and watch for a local reaction. In the child just mentioned no reaction occurred, and he handled his tetanus serum without accident.

Toxoid is still generally used in two doses, with three week's interval. Ramon gives a third dose two weeks after the second. Ramon and Helie<sup>2</sup> found 96 to 100 per cent immunes in 6 to 8 weeks after the series of injections. Ramon states that two doses of toxoid give immunity as frequently and as lasting as three doses of toxin-antitoxin. Park stated that only 80 per cent become immune after three doses of toxin-antitoxin. Bloomberg<sup>3</sup>, in Canada, reported 100 per cent immunity after the 4th dose of toxoid, in 572 cases. Guilford<sup>4</sup> stated that despite the high percentage of immunity reported by the use of toxoid, the duration of the immunity has not been established. Mozer<sup>5</sup> found 95.5 per cent negative Schick tests

in persons given toxin 2, 3 and 4 years before. Schick tests must be performed and read at the proper time following the administration of the toxoid in order that one may know the results. The duration of immunity depends among other factors upon the number of doses given. It should therefore be based upon 3 or 4 doses of toxoid rather than a routine two injections. Cooperstock and Weinfeld<sup>6</sup> reported 58 per cent of negative Schick tests in 3 weeks after toxoid, 79.5 in 9 weeks, and 92.5 in 16 to 22 weeks. Even one dose will give a certain number of negative Schick tests, about 46 per cent (Schwartz<sup>7</sup>).

The age factor, the number and spacing of the doses play a part in determining what the figures will be for the time at which individuals get a negative Schick test. Environment is a factor also (by contact). Injections close together may interfere with the production of immunity because of the "negative phase" which takes place after the first dose.

2. Ramon, G. and Helie, G. I.: *Am. J. Dis. Child.*, 39; 685, April 1930.

3. Bloomberg, Max. W. and Fleming, A. Grant: *Canad. M.A.J.*, 17; 801, 1927.

4. Guilford, H. M.: *Wisc. M. J.*, 29; 12, Jan., 1930.

5. Ramon, G., Debre, R., Mozer, G., Mlle. G. Pichot: *Annales De L'Institut Pasteur* 45; 326, 1930.

6. Cooperstock, M. and Weinfeld, G. F.: *Am. J. Dis. Child.*, 40; 1034, 1930.

7. Schwartz, A. B.: *Am. J. Dis. Child.*, 41; 1509, 1931.

*Reactions to Toxoid.* In young children, local reaction at site of injection, or general reactions are rare. I have seldom seen any local, and do not recall a general reaction. Pre-school children never have any appreciable reactions. In older children and adults a general reaction is more common from toxoid. This is true of other prophylactic measures in older individuals. Dick advises a preliminary Schick test in an adult to determine whether there is a marked pseudo-reaction. If also there is a history of diphtheria, it is well to give 0.1 to 0.25 c. c. of toxoid as preliminary doses. Dick states that the broth used in making toxoid should not contain an excessive amount of protein.

#### TOXIN-ANTITOXIN COMPARED WITH TOXOID TOXIN-ANTITOXIN

Requires 3 doses or more.

Administration takes 2 weeks or more.

Causes less reaction in older children than does toxoid.

To be Schick-tested 3 to 6 months afterwards.

Immunity takes longer to develop.

May sensitize due to presence of its horse serum.

Results better known from longer experience with this method.

#### TOXOID

Two doses or more.

Three weeks or more.

More reaction the older the child. None usually under 5 years.

Six weeks afterwards.

Immunity more rapid.

No sensitization.

Newer method, but the results are becoming well known.

Schick test reading can be greatly simplified for active immunization by waiting one week. The test area becomes brownish, pigmented and sometimes scaly, and one can therefore eliminate the question of pseudo-reactions. Routinely then, the mother is asked to bring back the child one week after the test is performed. If there is any reason for reading the test earlier, such as an exposure of the child to diphtheria, the test should be watched each day after being made.

*Summarizing.* Immunization will be more carefully done, checked by Schick tests, and retested when advisable, if physicians in private practice will make this a part of their careful regular work.

At present, toxoid in 3 or 4 doses seems to give the best results. This number of doses should be used if Schick testing is not to follow the injection of immunizing material.

Toxoid should be given preferably between nine and twelve months of age, or thereafter as soon as the opportunity occurs.

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#### POLYCYTHEMIA VERA

Clair L. Stealy, San Diego, Calif. (Journal A. M. A., May 14, 1932), believes that his experience with the use of phenylhydrazine hydrochloride in the treatment of a case of polycythemia vera over a period of seven and one-half years shows that: 1. Once the necessary dosage has been established for the individual patient, the patient will respond to that dosage consistently. 2. The patient does not acquire a tolerance to the drug necessitating increasing dosage. 3. The leukocyte count cannot be used as an index to treatment. 4. The drug does not produce any apparent deleterious effect on the liver or kidneys.

#### DIPHTHERIA\*

GEORGE H. GARRISON, A.B., M.D.  
OKLAHOMA CITY

This discussion is intended to bring before us certain practical points encountered in the diagnosis and treatment of diphtheria. For the five year period ending December 31, 1931, diphtheria was given as the cause of death in Oklahoma one thousand five hundred and sixty-seven times, (1567), an average of 321 each year. While we may rightfully expect a marked reduction in both the incidence and the mortality due to this disease during the next five years as a result of the increased effort toward universal immunization of susceptible individuals, it deserves some consideration now.

Kinnamann<sup>1</sup> of Kansas makes this significant statement, "we have observed in Kansas that diphtheria is apparently of a more virulent type as the number of immunized children is increased. Immunized carriers pass diphtheria organisms of a virulent type to the non-immunized child with the result that the case-fatality rate is increasing each year among the non-immunized children who contract diphtheria". Whether Kinnamann's explanation of this increased case-fatality rate is entirely correct or not, such observations should serve to make us more determined to immunize all susceptible persons and put us on guard lest we err in the recognition of diphtheria.

The recognition of diphtheria is not always easy, but certain characteristics of its onset, clinical appearance and course, aid us materially. There is usually acute discomfort localized in the throat, dysphagia, often a temperature of 103 or 104 and after a few hours the appearance of a gelatinous film over the involved area. The temperature may drop abruptly after 12 or 18 hours and the throat symptoms become much relieved as the definite diphtheritic membrane appears. Because it is unusual for the physician to see a patient in the first 12 hours of any illness, the initial elevation of temperature and early appearance of the throat are rarely observed. The typical diphtheritic membrane is usually a dirty grayish patch, tenacious, removed with difficulty, but on removal leaves a bleeding surface. In

\*Read before the Section on Medicine, Oklahoma State Medical Association, Tulsa, May 26, 1932.



adults and late cases at any age, the membrane varies greatly from the typical.

Follicular tonsillitis, scarlet fever, septic sore throat. Vincent's angina and syphilis, (secondary lesions), are the conditions which must frequently be differentiated from diphtheria.

*Follicular Tonsillitis* gives a more prolonged high temperature with more constitutional symptoms and presents numerous small yellowish white spots on the follicles of the tonsils.

*Scarlet Fever* is more often accompanied by vomiting, has a more reddened pharyngeal ring and soft palate, and a yellowish exudate easily wiped from the tonsils. Then, too, within 24 to 48 hours the skin eruption appears.

*Septic Sore Throat* has much more swelling and edema of tonsils, pillars, and uvula with marked necrosis and extremely foul odor. The neck likewise is more swollen.

*Vincent's Angina* may be absolutely indistinguishable from diphtheria when the infection is limited to a tonsil, except by examination of direct smear. Vincent's angina is more often unilateral, however, and has a greater tendency to ulceration.

*Syphilis*. Secondary syphilitic infections in the pharynx run a longer course, usually are associated with other secondary syphilitic changes or a history of infection, cervical adenitis, are unaffected by diphtheria antitoxin and clear up promptly with specific treatment. The blood Wassermann, of course, is usually positive.

Combinations of these conditions may occur. In 450 consecutive cases of scarlet fever, I observed seven instances of clinical diphtheria and clinical scarlet fever coexisting, all substantiated by positive throat culture for diphtheria bacillus and the usual course and desquamation of scarlet fever. It seems then when there is any doubt about the local throat condition the patient should have the benefit of diphtheria antitoxin. It may be impossible to tell whether or not diphtheria is present also in what is usually designated as septic sore throat and I feel that diphtheria antitoxin should be used routinely in these cases.

*Nasal Diphtheria* usually accompanies the faucial type, but when occurring alone is milder in its onset and more prolonged in its course and is characterized by a

persistent sero-sanguinous nasal discharge. Any persistent sero-sanguinous discharge from the nose should be examined for diphtheria bacillus, except possibly that known to be due to a foreign body in the nose.

*Laryngeal Diphtheria* usually has a history or appearance of preceding faucial involvement. It is to be distinguished from acute laryngitis and acute spasmodic croup, by the gradual development of hoarseness, aphonia and dyspnea, continuing into the daytime and becoming gradually worse. Mechanical relief of the dyspnea is a matter which may have to be considered. A discussion of that phase is impractical here, but in a general way it may be stated that unless someone will always be available to replace the intubation tube in case it becomes plugged or is coughed up, a tracheotomy is the better procedure.

#### CULTURES

While I cannot too strongly discourage the practice of withholding the diagnosis and the administration of antitoxin pending a report from throat cultures, one point on the manner of taking them, will aid in securing a higher percentage of positive cultures in diphtheria. The diphtheria bacilli are to a large degree mechanically removed from the exposed surface of the membrane by saliva, food and fluids and are present in greatest numbers under the advancing margin of the membrane. If one then rolls the applicator *under the margin of the membrane* in taking the specimen, more positive cultures will be obtained the first attempt.

#### ANTITOXIN

There is wide variation in the dose of antitoxin recommended in the treatment of diphtheria. It will ordinarily be considered sufficient to give 5000 to 10,000 units of antitoxin in early cases and those of moderate extent. In severe and toxic cases, especially if of several days duration, a dose of 10,000 to 20,000 units should be given with the larger dose receiving preference. Whatever dose has been decided upon it should be given at one time, though part of it may be administered by different routes, i. e. intramuscularly, intravenously or intraperitoneally, but not subcutaneously, because of slow absorption. A skin test for sensitization to the serum is advisable as a routine before injecting antitoxin and it is imperative that it be done before giving anti-

toxin into the vein. Quite often it will be observed that the visible membrane is even greater in extent 18 to 24 hours after giving antitoxin than at the time of injection and it is this which causes physicians to give a second injection of antitoxin. It appears that this increase in the size of the membrane will usually occur regardless of the amount of antitoxin originally given. Diphtheria membrane requires time to develop and the pathologic process had already been initiated over a definite area before antitoxin was given and simply goes on to completion.

Because of the severe reaction which may result, I cannot agree with those who advocate large doses of antitoxin intravenously. It is true that properly diluted and given slowly at body temperature, reactions are less likely to occur. 5,000 or 10,000 units of diphtheria antitoxin given into the vein will often cause a chill and fever of 104 or higher, the total reaction lasting over a few hours. It would seem desirable to avoid such a reaction in a patient who is potentially a cardiac case, if such can be accomplished without other risk. 1,000 or 2,000 units given into the vein rarely cause any reaction and this amount is theoretically enough for immediate use until absorption occurs from the larger quantity given intramuscularly.

#### COMPLICATIONS

The common serious complications of diphtheria are:

- (1) Paralysis
- (2) Heart changes
- (3) Hemorrhage

Paralysis of the soft palate, with regurgitation of fluid through the nose and nasal speech, ptosis of eye lid, weakness of facial muscles, loss of knee reflexes and inability to walk are all due to peripheral nerve injury. The paralysis eventually recovers if the patient does not succumb to other complications. One or more of the above paralyses usually precede the appearance of heart damage. The heart changes complicating diphtheria may show themselves in various ways; as acute cardiac failure, dyspnea, myocarditis, rapid or slow rate, absolute irregularity of rate, rhythm and force and murmurs.

There occasionally occurs a tendency to hemorrhage with bleeding from the nose and mouth and into the skin and internal organs. The prognosis is thereby always rendered much more grave.

#### TREATMENT OF COMPLICATIONS

Bed rest is imperative and no time or temperature limit can be placed on it. Patients with paralysis and heart complications tolerate large doses of strychnine and seem to be especially benefited by it. A child of three or four years of age can take 1/40 to 1/30 grain of strychnine every 4 hours by mouth or by hypodermic injection if vomiting; the dose should be reduced if restlessness occurs. It is generally agreed that digitalis is contraindicated in the treatment of post diphtheritic cardiac changes. McCullough<sup>2</sup> showed with the electrocardiograph evidence of damage to both the intrinsic conducting mechanism and to the heart muscle as a result of diphtheria. Marvin<sup>3</sup> in studying the effect of diphtheria on the cardiovascular system found, "The electrocardiograms from patients dying of circulatory failure, have shown two significant changes: interference with auriculoventricular conduction and interference with intraventricular conduction." Cushny's Pharmacology and Therapeutic 9th Edition states concerning the action of digitalis on the frog's heart, "consists of changes in the generation and conduction of impulses and in the contractility\*\*\*. The power of conducting impulses is distinctly reduced and this makes itself evident in the frequent failure of an impulse to pass from the auricle to the ventricle". These observations convince us that in diphtheritic myocarditis there is an interference with conduction of impulses within the heart and the administration of digitalis will cause still further embarrassment of cardiac function.

#### CARRIERS

A small percentage of persons recovering from diphtheria will become "carriers" of the bacillus. When local treatment to the nose and throat fails after a reasonable time to eradicate the organism, removal of the tonsils and adenoid tissue is usually successful in clearing up the condition.

#### IMMUNITY

The degree of immunity which a patient develops as a result of a diphtheritic infection is widely variable. Most individuals become permanently immune, some are immune for only one year or two years. If the immunity remains for two years, it will probably be permanent. It is essential then in view of the possibility of a loss of immunity after a period of



time, that we advise every patient of this possibility and urge upon him the necessity for having a Schick test done after one year and after two years. If he should show a positive Schick, he should be immunized.

1. Kinnamann, C. H. Effect of Diphtheria Immunization upon Case Incidence and Mortality. *Am. Jour. Public Health* 21:1013, Sept. 1931.

2. McCulloch, Hugh, Studies on the Effect of Diphtheria on the Heart. *Am. Jour. Dis. Children*, 1920. Vol. 20, P. 89.

3. Marvin, H. M. The Effect of Diphtheria on the Cardiovascular System. *Am. Jour. Dis. Children*. 1925, 29:433.

### SIMPLIFYING SUMMER INFANT FEEDING PROBLEMS

Vacation travel presents fewer difficulties in caring for infants on S.M.A. Instead of using milk from dairies of unknown standards, the mother in feeding S.M.A., is using a food made from milk which her physician knows to be produced under strict sanitary requirements and rigorous inspection.

Refrigeration is unnecessary because individual feedings of powdered S.M.A., may be made up as needed. If the supply runs out, S.M.A., is available virtually everywhere in the United States in prescription pharmacies from Skowhegan to Hollywood. S.M.A., is not a grocery product for adults, but a scientific antirachitic breast milk adaptation designed for infants.

S.M.A., is made to resemble nature's own formula, breast milk, as closely as modern scientific knowledge and laboratory control can accomplish,—certainly closer than a trial and error formula.

### TO WHOM SHOULD THE PROFESSION BE LOYAL?

The answer to the above is—to the company that gives the profession, first, a product that is dependable; second, the company that is loyal to the physician; third, the company that advertises to the profession and not to the laity, that is, the containers should not be labeled with all the instructions that are not removable. This is particularly so on containers of infant foods. No food agrees with all infants, so there are no instructions that can be placed on infant foods that will agree with all babies. When this is not considered by the company and the container has printed all over it, instructions for the amount of the product to be given to the age of the child, as is to be expected some infants suffer by this lay prescribing and the directions on the can.

One company that makes a specialty of infant food have always been very considerate of the profession, and have always labeled their products for the physician and not the lay. Mead Johnson containers have only the analysis of the product and the calories to the tablespoon or the ounce, therefore the general practitioner and especially the pediatrician should specify Mead, Johnson Company products.

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### THE PRESENT STATUS OF ALIMENTARY INTOXICATION OF INFANTS\*

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The general morbidity from alimentary intoxication has been greatly reduced by the introduction of more sanitary measures, improved standards of infant feeding and a better understanding of preventive measures. The mortality, however, in any given series of cases remains high. The slowest of development and the most difficult of mastering are those problems which concern the child acutely ill with what we please to call alimentary intoxication as opposed to bacillary dysentery—the latter being distinguished from the former pathologically by the presence of ulcers in the lower intestinal tract and clinically by the appearance of blood and pus in the stools.

The clinical picture of so-called alimentary intoxication is usually fairly definite. The child is acutely ill usually with fever, vomiting, diarrhoea, prostration and, if prolonged, dehydration, apparent from scaphoid abdomen, sunken eyes and fontanelle, dry skin and mucous membranes.

The pathological changes in the digestive tract are few. There may be pin point erosions of the gastric and intestinal mucosa but there is usually little more. The kidneys often show degenerative changes. But so few are the pathological findings as compared with the severity of the gastro-intestinal symptoms that we have been wont to say that the patient died a chemical death. Bacteriological studies have been just as indefinite. Various organisms have been blamed, particularly in given epidemics. No work, however, has found general confirmation. It is very probable that etiological factors vary in different localities and in different years in the same locality.

The very nature of the disorder has lent confusion to a clear understanding because diarrhoea and vomiting are two of the most common signs of illness in childhood. It is not strange that most of the attention has been focused on the intestinal tract, nor is it strange that progress has been slow since the digestive tract

\*From the Oklahoma City Clinic and Wesley Hospital. Read before the Oklahoma Pediatric Society, Tulsa, May 24.

shows so little evidence of pathological change.

With the introduction of bacteriology into medicine the flora of the intestinal tract was studied carefully, but no definite relationship could be shown between the gastro-intestinal disorders of infancy and bacteria. Then came more elaborate investigation of foods and studies in the physiology of digestion and in metabolism. Czerny and Keller thought that the digestive disturbances of infancy were metabolic in origin and that fats were the chief food constituents causing them.

Flexner in 1900, and Duvall and Basett in 1902 succeeded in establishing the dysentery bacillus as the etiological cause of ileocolitis. This ultimately leads to a clear cut distinction between alimentary intoxication and acute bacillary dysentery, but for the next few years there was much indecision as to which diarrhoeas were infectious and which were not.

In 1907 and 1908 Finkelstein elaborating on the work of Czerny and Keller published his observations on the intestinal disturbances of infants which were destined to have a far reaching effect. He felt that these digestive disturbances were due to perverted metabolism and to the toxic effects of the food elements, fat and carbohydrate. He divided the gastro-intestinal disturbances of infants into four groups: (Snow<sup>1</sup>).

1. *Disturbance of balance*—the tolerance for food especially fat is somewhat lessened. The child, however, does well on a limited diet.
2. *Dyspepsia*—the tolerance is greatly lessened. These children do well on nothing more than a basal diet.
3. *Decomposition*—the stage of decomposition and atrophy in which an increase of food causes a sudden decrease of weight.
4. *Intoxication*—the stage of extreme intolerance to food.

Finkelstein was very definite in his statements and said that from now on sugar must be considered the cause of often fatal toxemia. Later he and Meyer developed Eiweiss or protein milk for use in cases of intolerance to sugar.

There followed much discussion of

Finkelstein's classification and many alterations of the type of diet he advised, but followers of the German school, if they expected to see very much improvement, were to be disappointed as shown by a report of cases from the Hospital for Sick Children submitted by Cox<sup>2</sup> in 1922. He reported 190 cases of fermentative diarrhoea with a mortality of 37.5%, 181 cases of decomposition with a mortality of 57.5%, and 46 cases of acute intestinal toxemia with a mortality of 58.5%.

It is quite obvious that up to 1922 our methods of treating alimentary intoxication were not adequate. During the past decade a great deal of material has been collected on the effect of diarrhoea, vomiting, and dehydration on the chemistry of the blood. In addition there has been an effort to separate those cases of intolerance to food caused by a specific sensitization more especially to milk.

In 1926 Powers<sup>3</sup> published his paper on the management of intestinal intoxication. Previous to this pediatricians had recognized the importance of general care, but this paper was perhaps the greatest impetus such treatment had received. Powers stated that he considered the essential points in the treatment of intestinal toxemia to be: 1—the administration of fluids, 2—the transfusion of blood, 3—the withdrawal of food for a period of time, and 4—the giving of food at the end of the period of starvation in gradually increasing amounts. He further stated that he did not think it made very much difference what type of milk the child was on so long as the fat content was not too high.

The feeding of fat free milk and of acid milk has been utilized for a long time, but additional emphasis was given by Marriott. He also placed great stress on the importance of parenteral infection as the cause for their continuation. He advised opening the mastoid antra in certain cases of intoxication<sup>4</sup>. While his advocacy of antrotomy seemed somewhat radical it served its purpose not only in instituting a therapeutic measure which is at times valuable, but even more so in leading to the proper evaluation of the importance of parenteral infection.

With carefully calculated diets after a period of starvation, with the administration of fluids and blood transfusion as outlined by Powers, and with careful examination of the patient for infection and in-



stitution of treatment when found, the mortality still remained high. More definite studies of the blood chemistry by Hartman and others lead to a clearer understanding of the effect of diarrhoea on the blood and tissue chemistry.

Hartman<sup>7</sup> has found that severe watery diarrhoeas tends to produce changes in the direction of acidosis because of (1) extensive loss of body fluids, (2) loss of body salts in diarrhoeal stools and (3) starvation. The loss of water from the blood leads to reduction in the blood volume, which in turn leads to reduction in the volume of blood flowing through vital organs in a given time. Such circulatory insufficiency leads to anoxemia which favors the accumulation of lactic acid and also leads to a diminution of urinary excretion, which favors retention of such ions as  $\text{Cl}$ ,  $\text{HPO}_4$ , and  $\text{SO}_4$ . Increase in these ions occur largely at the expense of the bicarbonate ion which is displaced from combination with base. As a result the ratio of  $\text{B H CO}_3\text{—H}_2\text{ CO}_3$  which is normally 20—1, tends to diminish because of decrease in the numerator and increase in the denominator.

Associated with the failure of water reabsorption by the large intestine there is also a failure of reabsorption of basic salts from the intestinal juices which further leads to a reduction in the alkali reserve.

Starvation results in destruction of body tissue with liberation of such acids as sulphuric and phosphoric, and, if carbohydrate metabolism is reduced long enough, the accumulation of acetone bodies which further depletes the alkali reserve.

To combat this tendency toward acidosis Hartman advised a solution to be given instead of saline parenterally and another instead of water to be given by mouth. The former is a solution of lactic acid and sodium hydroxide which forms sodium lactate to which has been added  $\text{Na Cl}$ ,  $\text{K Cl}$ , and  $\text{Ca Cl}_2$ . The lactate ion is burned leaving the sodium ion to replace sodium which is lost. A similar solution of sodium lactate to which may be added Karo is given by mouth. The application of these solutions has proved an important aid in maintaining the acid base balance in infants with severe intoxication.

In 1930 Marriott<sup>8</sup> published his book on infant nutrition in which the present un-

derstanding of acute gastro-intestinal intoxication of infants is clearly and excellently presented. His appreciation of the role of bacteria and of digestion as derived from his own and the work of others is well worth consideration. When the temperature of an infant is elevated the gastric secretions are diminished especially the hydrochloric acid. This deprives the stomach and duodenal contents of their anti bactericidal properties and permits the growth of bacteria which are normally in the flora of the lower intestinal tract. Experimentally the toxins from the colon bacillus when injected per rectum cause no symptoms, but when given by mouth a severe diarrhoea follows. If, therefore, they are permitted to grow in the stomach and duodenum Marriott holds that the toxins they produce will cause intestinal disturbances, and the vomitus from such a patient offers an excellent means for organisms to find their way into the middle ear. Children fed on cow's milk have less acid in the stomach because of the greater buffering power of the increased salt content over that of mother's milk. He, therefore, feels that acidified milk is best, preferably a milk which has been acidified with an organic acid to prevent further drain on the alkali reserve. He feels that acidified milk decreases the number of organisms which grow in the upper intestinal tract and thus eliminates this to some extent as a possible source of intestinal irritation. However reasonable the use of acidified milk may be one cannot expect too much of it, and the value of a period of starvation cannot be over estimated.

The treatment of alimentary intoxication in the light of a clearer understanding of the acid base balance, and a proper consideration of parenteral infection is on a much firmer basis. There remains, however, many cases which are beyond our control. I am not referring to the marantic child but to the child who suddenly gets sick, has fever, vomits, is prostrated, goes into acidosis and dies within a few days of onset or develops a severe uncontrollable diarrhoea gradually becoming dehydrated and wasting away. Many of these children appear to be well nourished but in reality their tissues resist disease processes poorly largely because they have been fed on formulae very high in sugar and low in protein.

A large percentage of these children are recovering with treatment directed toward

maintaining their acid base balance and with transfusions, but there seems to be some other factor present which we have as yet not taken into consideration. In 1923 Boyd<sup>9</sup> reported a toxic substance which she found in the mucous membrane of patients dying from acute intoxication. This substance is very toxic for young animals producing a definite symptom complex consisting of depression and narcosis, anorexia, circulatory failure, increase in the number of stools and in some instances convulsions and death. This toxic substance was present in great quantities in the portal veins and to some extent in the general circulation. Its highest concentration would, therefore, reach the liver.

More recently Minot and Cutler<sup>10-11-12</sup> have shown that the liver damage and fatalities in dogs in carbontetrachloride poisoning is probably due to guanidine which is normally present in the blood in small amounts. Dogs intoxicated with carbontetrachloride have a marked increase in the amount of guanidine in the blood. Guanidine injected into dogs produces a similar toxic condition. There is profound toxemia, high guanidinemia, low blood sugar, depression, a severe bloody diarrhoea and convulsions. At autopsy some of them have increased cells in the spinal fluid, positive globulin, and focal areas of congestion in the brain. These animals do not show evidence of toxemia if there is sufficient ionized calcium in the blood stream, and the progress of toxemia can be arrested by the injection of calcium chloride into the vein. They further demonstrated the presence of an abnormally high amount of guanidine in the blood of eclamptic women and a few cases treated with calcium therapy showed improvement.

Minot, Dodd and Casparis<sup>13</sup> carried this work further in its possible application to acute alimentary intoxication. In many of the most seriously sick children they found a high guanidinemia and a low blood sugar. Their preliminary report consists of a study of 5 cases of intoxication treated with calcium gluconate intravenously and intramuscularly. While their series was small they felt that there was definite improvement and that this was to a considerable extent due to calcium therapy.

The origin of guanidine is an important question. The two main sources are probably decomposition of tissue and incom-

plete breaking down of ingested protein. It has been suggested that cow's milk contains in the summer time a larger quantity of amino acids from which guanidine may be derived. It is of course too early to say whether in these studies will be found an explanation of the toxemia in these cases, but they are interesting and are apparently directed toward the right line.

This brings us to the last consideration. Vitamine A is said to increase the resistance of infection. Block<sup>14</sup> in describing cases of xerophthalmia in Denmark during the war noted the marked increase in infections particularly of the respiratory tract and genito-urinary tract. Boynton and Bradford<sup>15</sup> compared the effect of infections on rats which had been fed on a diet deficient in vitamine A and D and noted a marked decrease in resistance in the rats fed on vitamine A deficient diets. A decrease in resistance to infection occurred before signs of xerophthalmia appeared. Kramer<sup>17</sup> in 1923 demonstrated that the intestinal epithelium taken just above the ileo cecal valve in rats fed on a diet deficient in vitamine A became atrophic and that bacteria grew luxuriantly in the mucous glands. Wolfe and Salter<sup>18</sup> did not find this change but noted changes in the epithelium of the respiratory tract, the salivary glands, and genito urinary tract. Mason<sup>19</sup> feels that the primary injury to the epithelial cells is concerned in some way with an interference in the secretory process of the glandular type of cell, which ultimately leads to a cornification of epithelia and the dried surface and dead cornified cells offer an excellent place for the multiplication and invasion of bacteria.

We are well aware of the fact that the severe cases of intestinal toxemia occur more frequently in infants who have been poorly fed. Not only are these children deprived of a certain source of vitamins in cod liver oil and orange juice but their diet is very deficient in them. The reaction from this extreme is seen in the fact that healthy, well-nourished, adequately fed children are stuffed with every conceivable form of vitamine in amounts calculated to cure the worst forms of deficiency in the most poorly nourished children. But the fact remains that vitamine A deficiency may be a factor in alimentary intoxication and more particularly in the severe diarrhoeas and marantic children—indeed as suggested by



Dodd<sup>20</sup> this may be the real benefit of transfusions. At any rate I feel that it is a mistake to overlook vitamine A as a factor and to replace codliver oil which has both A and D in it for viosterol which has only D.

In reconstructing the sequence of events which occurs in acute alimentary intoxication it is very likely that the condition is precipitated by infection, over heating, or some impropriety in the diet such as over feeding during extreme hot weather or feeding food which is not easily digested or is spoiled. The infection may be a cold, otitis media, mastoiditis, impetigo, pyelitis, pharyngitis, boils, etc. The child becomes acutely sick with fever, vomiting, diarrhoea, and prostration.

The first thing that should be done is to stop all food and if vomiting stop everything by mouth. This gives the intestinal tract a chance to rest from its work. Even though one feels very definitely that the food the child had been getting was very poor, and even though it may have been responsible for the upset, this is no time to change the formula for only harm can be expected from any food.

The child should then be thoroughly examined for evidence of infection. The mothers everywhere seem to expect the doctor to prescribe a purgative, and quite often they have already given one before the doctor is called. This practice should be avoided except in those rare incidences when we know the child had taken spoiled food because it would only aggravate the existing intestinal irritation.

If dehydration is imminent fluids must be given parenterally. Very sick children whether dehydrated or not should be given fluids into the vein, under the skin, or into the peritoneal cavity. It is good practice to see that the patient gets about 1/6 of his body weight in fluids each day and govern the amount and number of parenteral injections this way.

Should the fluids be saline, glucose, or Hartman's combined solution. If there is evidence of impending acidosis such as prostration, dehydration, or air hunger, Hartman's combined solution is probably best and with it glucose into the veins.

After the very sick child has been given plenty of fluids he should be transfused. This tranfusion consists of whole citrated blood from a suitable donor not in excess of 15 c.c. per pound of body weight. It

is probably better to give a small one and repeat it than a large one.

The period of stravation varies in individual cases from 12 to 48 hours. Water in small amounts frequently should then be started. If, however, acidosis is feared, Hartman's solution to which Karo has been added may be given. If the patient retains water then orange juice may be given and as tolerance increases food may be added very slowly.

The type of food is not as important I believe as it was once thought. Cow's milk, evaporated milk, buttermilk, or dried milk may be used. I personally feel, however, that it is better to use a diluted whole milk than straight skimmed or protein milk, because if guanidine is a factor certainly increased protein should be guarded against.

In the very sick child from the start I think we are justified in giving calcium. Minot, Dodd and Casparis advise its use in the vein at first and then intramuscularly. They use a one percent solution of calcium gluconate and inject it very slowly into the vein.

Codliver oil should be added to the diet as soon as possible. This is particularly necessary in the marantic child, but we must remember that a certain number of these marantic children are specifically sensitive to cow's milk and will not thrive on it regardless of other treatment.

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## "SOME CAUSES OF MAL-NUTRITION"\*

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The health status of the child depends on three factors, namely: heredity, environment and nutrition. The influence of these factors upon growth and development are interdependent and to secure optimum results a panoramic view of the child in its total aspects must be obtained. A single set of facts such as weight and height, posture, body build, mental attitude, general appearance, amount and kind of food eaten, advantages of home surroundings, schooling, and so forth, is not adequate in itself to appraise and pass judgment on the health of a child. However, it is important to know the facts concerning a child's parents as to their mental and physical status and educational opportunities; it is equally important to know the child's past and present history; the influence of home and school life, of neighbors, playmates, the hazards of disease, emotional problems and all the cosmic factors that pass by and upon the child day by day; and finally, it is most important to have a clear and profound conception of all the problems that affect the nutritional life of the child. Undoubtedly the main business of a child is to enjoy physical growth and mental development without surcease, to the end that his body equipment and his behavior enables him to happily and satisfactorily perform his biological and spiritual purposes during his whole life. Heredity, because of present eugenic practice, cannot be controlled to a great extent; environment, too frequently, cannot be materially altered; consequently the chief approach of the physician dealing with children is the proper application of knowledge bearing upon successful nutrition.

In order to do this the requirements of an adequate diet must be constantly borne in mind. The failure to fulfill these requirements must necessarily result in signs and symptoms, even though slight at times, of failing nutrition. The requirements of an adequate diet during the first year must include a minimum number of calories; 45 to 60 during the first year of life, sometimes more for very thin in-

## SKIN ERUPTIONS FROM BISMUTH THERAPY IN SYPHILIS

In all of twenty-two cases of skin eruptions from bismuth therapy observed by Edward A. Skolnik and Irma Aleshire, Chicago (*Journal A. M. A.*, May 21, 1932), the eruptions that developed as a manifestation of bismuth sensitivity have never previously appeared in the patients. The exanthems occurred during the administration of bismuth and ceased after the withdrawal of the drug, though some of the common skin disorders which they simulated are notably refractory to therapy. Since the eruptions in this series were so benign and resembled some of the usual skin diseases, the authors felt justified in reproducing the condition a second or even a third time to prove the etiologic role of the bismuth. Thirteen of the cases were tested and proved in this fashion. The mildness of the eruptions is best illustrated by those cases in which the use of bismuth was continued in spite of the sensitivity, some of these patients gradually becoming desensitized. In contrast to these cases, there are reports in the literature of cases comparable in severity to those of arsphenamine dermatitis. The acute types of rash produced were the urticarial, folliculopapular, exfoliative, and the erythematousquamous, which resembled pityriasis rosea. The chronic types were the lichen planus-like and the chronic lichenified form, simulating lichen simplex chronicus. By far the greater number, fourteen, were in the pityriasis rosea-like group. The incidence of skin reactions was approximately 1 in 1,140 bismuth treatments. Of the twenty-two cases reported, ten were in the Negro race, which is a much higher incidence than in the white race, considering the relative attendance of the two in the syphilis clinic. Reactions occurred with all the preparations used, which were an oil suspension of potassium bismuth tartrate, an aqueous solution of bismuth sodium tartrate, and an oil suspension of bismuth salicylate. The eruption was reproduced in several instances by a different preparation of bismuth, indicating that the sensitization was to bismuth alone. These reactions developed in patients undergoing treatment for all stages of syphilis. In no case was there sensitivity to neoarsphenamine, although one man showed a marked sensitivity to mercury. Other than the skin lesions there were no subjective manifestations attributable to the bismuth, except in two cases with moderate stomatitis and in another case with severe nausea and icterus. No serologic change attributable to the nonspecific action of the eruptions (esophylaxis) was found after their healing.

\*Read before the Staff of the Ponca City Hospital. February 12, 1932.



fants, but less for fat ones. The amount of food in calories per unit of body weight becomes decreasingly less as the child grows older until the average adult uses only about fifteen calories per pound of body weight. The child needs also a minimum amount of protein, and if milk is used as a basis, it requires one and one-half ounces of milk for every pound of body weight each twenty-four hours. When milk is not used (and children will grow normally without milk) other proteins, such as meat and eggs must be given in adequate amounts. Children fed on less than this minimum amount of protein will invariably develop anemia or nutritional oedema sooner or later. Then a certain amount of carbohydrate is necessary, though this varies with the muscular activity of the child, and the ratio to protein should often vary in putrefactive and fermentative disturbances. Children need approximately one teaspoonful of sugar or its equivalent in starch for every pound of body weight each twenty-four hours. The amount of fat in a child's diet is relatively unimportant, though it should often be reduced during fever, hot weather or any other condition where a delayed gastric emptying time may cause an increase in the disturbance. An adequate diet must also contain fat soluble vitamins A and D and water soluble B and C. It is difficult clinically, to determine a mild vitamin deficiency, except vitamin D. However, early and late in the child's life, it must have milk, butter, eggs, whole cereals including their outer covering, citrus fruits, vegetables, and adequate amounts of cod liver oil or sunshine. Further the child requires a minimum amount of water, which is one and one-half to two ounces per pound of body weight every twenty-four hours, varying with the weather and other conditions. The well-fed breast or bottle baby will not take much water, because it obtains the amount it needs in food, milk being 87% water. Finally an adequate diet must be digestible and palatable, and free from harmful bacteria. It must be remembered that certain disagreeable tastes and odors are the result of unpleasant associations, which explains why most infants will take certain things with impunity that adults dislike, for example, cod liver oil. Infants or children forced to take food or medicine usually dislike them. Attention is also called to the fact that artificial feeding of infants with cow's milk was not very successful until the

milk was boiled. No wonder Eagle Brand milk, which is disparaged now, usually gave better results than unboiled cow's milk, because at least it was free from harmful bacteria.

Besides an adequate knowledge of diet, it is also important to recognize the attributes or characteristics of the healthy child. Conditions which cause the loss of the normal attributes may be accepted as the causes of mal-nutrition. Thus the normal child is happy, his emotions are stable and difficult to upset. He stands ordinary pain well, and is not fearful of anything except that which has given him previous harm or pain. He sleeps at regular intervals, and when awake requires practically no attention. He gets hungry at meal time, and enjoys a good appetite. His bowels move without interference; his skin is smooth and pink; subcutaneous fat is firm and turgent. His growth is regular and consistent. Children that vary from these characteristics to the same degree are abnormal.

The effects of disease, in the main, are nutritional disturbances. The crux of the importance of nutrition may be summarized in the axiom; so long as the child obtains his food requirements its ability to cope with disease is increased and in direct proportion the opposite is equally true. Exceptions to this, where nutrition may be disregarded for the time being, may be certain surgical diseases and acute fulminating infections, or toxemias. However, the successful outcome of a respiratory, gastro-intestinal, or urinary tract infection, and most other disturbances will depend in a very large measure on the maintainance of a normal or nearly normal nutrition. The ability to satisfy the requirements of nutrition usually varies with the severity of the effect of the disease. However, the disease itself should not blind one as to the possibilities of a failing nutrition. In other words, the child as a whole should be considered, and not just the disease. Infections are one of the principal causes of mal-nutrition, frequently in spite of the most intelligent management. It is common to see a child started through a period of under-nourishment, and consequently slow convalescence by the over-zealous application of empirical measures intended to combat the disease first hand, when perhaps the illness was trivial and in a child well able to have adjusted himself spontaneously. The method and requirements of immuni-

zation were not given due consideration. Then there is a large group of children suffering from mal-nutrition because for various reasons, adequate food was not offered, or would not be taken. To obviate this dilemma, one must know the requirements of an adequate diet; and further, one must recognize the factors that prevent children from eating when given the opportunity. Poor appetite is common, and is based on an unpleasant emotional sensation. Usually hunger, which is a physical sensation, prompts a child to perform overt acts intended to obtain food, though quite often the signs and symptoms of hunger are misinterpreted as nervousness, insomnia, and fretfulness.

The causes of poor appetite may be physical or psychological: The physical causes of poor appetite may be due to disease processes, such as infections, organic disease of heart, lungs, or kidneys, or to mental abnormalities, anemia, and so forth; or to hygienic deficiencies in the lack of sufficient fresh air, sunshine, exercise or sleep (the coddled child is the one to suffer more than the vagabond, as a general rule); also to dietary causes, such as over-feeding, especially where one food as milk predominates; too short intervals between meals, or eating between meals, which might be classed as over-feeding, but practically always results in insufficient intake of food. The proper physiology of digestion requires a regime of regular rhythm, consequently, a second feeding should never be taken until the first one has had ample time for digestion. This fact must be especially recognized when a diet rich in fats is offered, because it is well known that fats inhibit the emptying time of the stomach. Another very frequent cause of poor appetite is the omission of the vitamin factors in the diet. All of the vitamins that are known play some part in stimulating growth, hence the need of these factors in children is vastly more important than in adults. In this connection I believe that there is a common failure to recognize the physiology of the skin as a medium, which receives the radiating effects of the ultra-violet rays of the sun, and as a principal organ that has to do with the heat regulatory mechanism of the body. Over-clothing, and too much in-doors results in characteristic deficiencies. The feeding of foods containing vitamins B and C as well as those containing organic iron should be started early in the infant's life,

always before the need of such has become apparent. A diet which leaves a small residue, such as one consisting of too much sweet or starchy foods, is a frequent cause of poor appetite. Constipation is usually present in this type of diet, and the mistake is often made of treating the constipation with drugs rather than properly modifying the diet.

The psychological causes of poor appetite may depend upon the child or the attendants, or in the technique of the meals. Most children crave the attention of the mother, or other attendants, and often at meal time refuse to eat to obtain the desired attention. Quite often, also, children are too busy playing, or have too much interest in other things to enjoy their meals. All children are imitative in their nature and no measure in their management succeeds as well as the shining light of a good example. As a result we see many children who dislike certain foods, and refuse to eat well, because other members of the family set for them such an example. Then, there results invariably, from repeated coercive attempts to make the child live according to an unsound regime, a condition called negativism; and if such an unfortunate child feels that someone wants him to eat he simply is unable to perform satisfactorily, because of his attitude toward such management. The ideal condition, of course, would be to allow the child to eat if he wanted to, and not do anything about it if he did not. However, many mothers contrive various schemes to induce their children to eat, using one method for awhile, and then another. Thus, haphazard methods, wrong psychology handling on the part of the attendant, usually induces the child to be concerned with the method used rather than to obtain the pleasure in the business of eating, necessary to enjoy his meal. There are many errors frequently seen in the technique of the meal, such as forced feeding, the over-solicitous hovering attitude, too much talk about eating habits, too much discipline especially stressing manners, unpleasant scenes, such as arguments or quarrels at the table, and too much time allowed at the table.

One of the most frequent causes of mal-nutrition in early life, especially, is vomiting, and I believe a more intelligent diagnosis of the cause of vomiting would result in fewer mal-nourished babies. In early life I would place too frequent nursing as the most frequent cause of vomit-



ing; next to this, nursing at the breast or bottle, too long, especially when the milk is sucked out with difficulty. Both conditions result in over-distention of the stomach, either through swallowed air or fermentation, and it is practically a routine of mine to allow infants to nurse for a period of ten minutes every four hours. An infant that does not obtain enough food is also very likely to vomit. Infants fed on formulas of low caloric value, even though large volumes of the food is given, are prone to vomit. Parenteral infections in older infants and children is the most frequent cause of vomiting. When vomiting is seen in a child, who has been doing fairly well, and fever is present, it is almost a certainty that a focus of infection exists somewhere in his body. It is a mistake to change the type of feeding with such a history. Sometimes infants are seen that vomit when every condition seems satisfactory. The infant sleeps poorly, cries a great deal, and nothing seems to please it. This may be a hypertonic infant, and the vomiting is a result of gastro-enterospasm. I find that some mild sedative, such as one-half grain of pheno-barbital, once or twice daily, relieves this condition nicely. I have never been able to obtain satisfactory results in the use of atropine. One must be on the look-out always for pyloric stenosis, appendicitis, and intestinal obstructions as well as intracranial conditions, and toxic states, such as acidosis, diabetis, nephritis, etc.

The recognition of the causes of diarrhea would save many infants and children from becoming mal-nourished. I always consider that a diarrhea of whatever nature is sufficient to empty the intestines and feel that the use of any cathartic only increases the already over-active peristalsis. The immediate effects of diarrhea is loss of water from the body, and if the loss is great enough disaster may result. By obtaining a good history of the nutritional life of the child and with a complete physical examination, it is not difficult as a rule, to determine the cause of the diarrhea. Once the cause of a diarrhea is determined, the proper treatment is obvious. I never consider that fermentation or putrefaction in itself causes diarrhea, but would always try to determine what caused those conditions. The classification of the causes of diarrhea is as follows: (1) starvation or under-feeding (2) mechanical irritation, that may result

from spoiled milk (bacterial soup), excess of fatty acids, uncooked vegetables or fruits; sometimes, though not always, allergistic substances may act as mechanical irritants, honey for example. (3) infections outside the intestinal tract, such as "colds" tonsillitis, pyelitis, etc; also heat especially due to extremely hot weather in summer time. (4) infections inside the intestinal tract such as dysentery and typhoid.

Constipation, as such, probably should not be included in a discussion of mal-nutrition, but I see so many well children made more or less miserable and under-nourished children made worse because of misunderstanding of the normal physiology of the gastro-intestinal tract. I feel that the only time a child really needs anything done to make his bowels move is in an impending or existing impaction as indicated by voluminous and dry stools. The use of laxatives and cathartics usually tend to aggravate the condition. The causes of so-called constipation are easy to recognize by checking the diet requirements. The dietary factors that should be considered are: (1) insufficient total quantity of food, (2) improper balance of carbohydrates, fats, and protein, (3) foods leaving too little residue, such as an excess of milk in older children, (4) vitamin deficiency, (5) use of laxatives and cathartics. Constitutional or anatomical factors may exist in such conditions as sluggish intestinal tract or atony, long sigmoid, variations in mesenteric attachments, anal fissures, celiac disease and Hirschsprung's disease. Hypothyroidism and the simple failure to form the proper habit should always be borne in mind.

Medical science has certainly made the first few years of a child's life less hazardous. However, the results are nothing like they should be, due to non-use or misuse of available knowledge. Mothers generally are sincere, intelligent, and all try hard, but they are not very successful in their venture of motherhood. Their offspring, too often, either die early or live in physical or mental abyss. One reason for this may be over-emphasis on the part of the physicians and parents. Parents, especially have become too self-conscious of their responsibility and some have been more or less transfixed with fear. Another reason may be that the science of pediatrics has changed or progressed so rapidly that there has not been time for the old ideas and ideals to have been re-

placed by the new. It is difficult for many to realize that pediatrics is interested mainly in the mental and physical behavior of children and is no longer a treatise on diseases of children. Some consider modern methods and ideas to be radical, but perhaps those people are rather intolerant of any opinions held by someone else. And then, there is another class of people who want what they want regardless of results. However, in the words of Secretary Wilbur, "In the midst of our crowding eagerness to help lift our children to higher levels, we must guard them against our own over-zealous programing and be sure to leave them sufficiently wide margins of free time and free space for the great and joyous adventure of growing up, as personalities operating under their own motive power."

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#### TREATMENT OF OBSTINATE CHOREA WITH NIRVANOL

T. Duckett Jones and John Lesh Jacobs, Boston (Journal A. M. A., July 2, 1932), report the histories of three obstinate cases of chorea, with emphasis on their response to nirvanol therapy. In each of the three cases, "nirvanol sickness" was produced. The dosage was halved after three days and discontinued on the first appearance of rash. A definite rash occurred in each case; on the sixth day in case 3, and on the eighth and ninth days respectively in cases 1 and 2. Case 1 at no time showed a temperature reaction, and in case 2 there was a single rise to 101 F. (rectal), sixteen hours prior to the appearance of the rash. Definite eosinophilia occurred in all cases, with an inversion of the neutrophilic and lymphocytic ratio. There was a definite increase in the total eosinophils. Case 3 failed to show the usual variation in neutrophilic and lymphocytic elements until quite late, probably because of the complication of hemorrhage. The most interesting phase of the report is concerned with the unusual reaction of case 3 to nirvanol therapy. A definite rash appeared on the sixth day, preceded by a temperature rise to 102 F. (rectal). On the ninth day after therapy was begun, bleeding occurred, first from the gums, then into the skin and subcutaneously. Blood platelets disappeared from the smear. There was a conspicuous prolongation of bleeding time with coagulation time unchanged. A sudden pulmonary episode occurred on the ninth day, possibly best explained as bleeding into the lung tissue. Each of two transfusions was followed by definite improvement. The blood picture resembled bone marrow suppression, as produced with nirvanol in rabbit studies by Leichtentritt and Lengsfeld, and that seen in human beings, in benzene and arsphenamine poisoning. In addition, there was a secondary reaction, three weeks after therapy was begun, consisting in a rise in fever of two days' duration. The first reaction with its unusual pulmonary complication was nearly a fatal issue and shows clearly that the drug is one not to be used indiscriminately.

#### RINGWORM AND ITS ALLIED ERUPTIONS

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The title of this paper may suggest that an elaborate and technical essay upon ringworm is forthcoming, but I assure you it is my purpose to discuss only the interesting and important facts. I shall omit at the outset the various yeast infections such as actinomycosis, blastomycosis, favus, etc., and include only the common varieties which are seen daily in the practice of general medicine.

The word "eczema" formerly included all kinds of eruptions of unknown origin, including both the moist and dry varieties, most of which are now known by other names. Gruby, in 1842, discovered the causative factor in so-called eczema marginatum of the inguinal region, and later more carefully studied and designated by Sabouraud as *epidermophyton inguinale*. By this discovery much impetus was given to further study of dermatoses of which the etiology was unknown.

Such research has separated many dermatoses, such as psoriasis, pityriasis rosea, dermatitis herpetiformis and others from the group of eczemas, and this term has now become much more restricted. The work of Sabouraud in culturing various fungi from so-called eczema remains a classic in the annals of medicine.

Prior to the World war, fungus infections attracted but little attention; however, since then ringworm has become so common as to be classified as a serious public health problem. According to reliable statistics, such infection now afflicts about fifty per cent of the entire adult population. Fortunately, serious complication or widespread areas are rare.

It has long been noticed that in many patients who may have typical marginated, vesicular, fungous eruptions of the feet and hands microscopical examinations are positive for the feet only. No plausible explanation of this apparent phenomenon had been advanced until 1925, when both Jadassohn and Williams, working separately, proved that the eruption of the hands was, in most cases, only toxic in nature; in other words, the fungi on the feet liberated a toxin which had a predilection for the hands. Many others

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were soon able to confirm the findings of these two men.

Peck later proved that by administering the blood serum from a patient having a fungous infection to a patient negative as to actual infections, and also to the patch test of attenuated organisms, would soon become sensitive to the toxins of the fungi used in the original patch test.

These findings revealed the probable etiology of many of the previously unexplained, so-called toxic eruptions occurring over various parts of the body, and so frequently associated with ringworm infection of the feet. Such dermatoses were formerly classified as a toxic dermatitis, or eczema, with an accusing finger pointing toward an ever present focus of infection.

We are now convinced that this secondary toxic eruption known as trichophytid may include many forms of dermatitis. One of the most common forms is manifested as a vesicular and bullous dermatitis scattered about the extremities and trunk. These are sometimes so grouped as to be difficult to differentiate between atypical cases of dermatitis herpetiformis, pemphigus or erythema multiforme bullosa.

Another characteristic trichophytid may appear as multiple annular, discrete, pruritic, eczematoïd lesions over the trunk; such may be mistaken for a pityriasis rosea, dermatitis exfoliativa or tinea corporis. The lesions, however, soon begin to involute and disappear, providing too vigorous and irritating treatment has not been instituted, and at the same time, active treatment has been directed toward the primary focus. Such a patient must be put on a general eliminative regime plus soothing, antipruritic lotions. The most important item, however, consists of active and persistent treatment of the primary focus.

No routine treatment for ringworm can be successful in all cases, because of location, sensitivity of the skin to strong medicines, the type of organisms, etc.

As in all other diseases, the most important part of treatment lies in its prevention. A great number of infections are traced directly to public bathing pools, locker rooms and gymnasiums. Some schools have very successfully combatted increase in fungous infections of the feet, by having their athletes walk through a shallow pool of dilute chlorinated lime on

their way, for instance, to the swimming pool. Correction of constantly perspiring hands and feet is an important preventative factor. Daily use of good soap and water are valuable preventative agents.

Desquamation remains one of the chief methods of treatment of active ringworm. Chrysarobin evokes an irritation which seems to stimulate the skin into taking care of itself, either by the upbuilding of local immune bodies or actual destruction of the myceliae.

Many areas affected by ringworm soon become eczematoïd and are sensitive to many external irritants which previously did not affect the skin. Dirt, vegetation, soap and water commonly make ringworm lesions worse. Avoidance of secondary infection is an important factor. Bandaging the parts with a bland astringent ointment is of advantage.

When the lesions are between the toes, separating of adjacent infected parts is an important aid, by absorption of exudate and lessening irritation due to rubbing. If too strong keratolytic agents are used repeatedly, an eczematoïdization may occur and be very difficult to heal. It is often impossible, however, to keep a patch of tinea from becoming eczematoïd; therefore, unfiltered x-rays in small repeated doses are valuable in the control of the disease.

The question of susceptibility to the various fungous infections is an interesting one, but like that of many other infections has not been solved.

#### SUMMARY

1. A short discussion of the common types of ringworm is presented.
2. Special consideration is given to the toxic manifestations of ordinary tinea; namely, vague, irregular, circumscribed, eczematoïd lesions about the trunk and more commonly, vesicular lesions of the palms; these constitute the so-called trichophytids.

3. Suggestions as to treatment are given.

## A FURTHER STUDY OF THYROID PROBLEMS

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Much more than ordinary interest is attached to the subject of "The Study of Thyroid Problems." The purpose of this paper shall not be to discuss all the problems of goiter, but to mention some and give a detailed discussion of others. To the scientist or the surgeon, who devotes himself exclusively to the subject, this paper will be of little concern. To the busy physician, who has little time to review the literature, I hope that we may record some data that will be of value. The problems of goiter must be assumed by the physician, and not the surgeon, because the small number of cases operated concern only a minimum percent of the population affected with this silent but far reaching and ever present tragic disease.

Classification has been a problem for all concerned, since the real study of the disease began. This is due to the fact that classifications have been based on the opinion of the pathologist and physiologist and clinician, each classifying from his viewpoint. The classification which concerns the patient is—"am I sick, or will I be sick from my goiter?" The classification of importance to the physician who has to "paddle his own canoe" is—which types of goiters are producing symptoms and which are not. The question for him to contemplate is, "do I keep myself informed so that these symptoms can be recognized, wisely interpreted, and the patient given intelligent treatment?"

The American Association for the study of Goiter approved the following clinical classification:

- Type 1. Non-toxic diffuse goiter.
- Type 2. Toxic diffuse goiter.
- Type 3. Non-toxic nodular goiter.
- Type 4. Toxic nodular goiter.

Most authorities and teaching institutions taught a different classification. This classification makes it easy to standardize the records of the hospitals throughout the country and makes it possible for the student to carry in mind a working understanding of the subject.

The cause of goiter is the most interesting and fascinating problem in the study

of the disease. Scientific investigators have in the past disagreed as to the cause of the various types of goiter. Pathologists have not agreed that all types are identical pathologically. More and more, however, conclusions seem to indicate that all types are the same both etiologically and pathologically.

Sufficient data has been collected and correlated to justify the opinion that lack of iodine and infection play a prodigious part in the production of pathological disturbances in the thyroid gland. Factors influencing etiology may be briefly mentioned as follows: Heredity, psychic trauma, food and water supply, and sex imbalance.

All modern authorities and scientific investigators agree that heredity plays an important part in the causation and transmission of goiter and cretinism, furthermore that goiter ancestry is almost universally found in cretins and deaf-mutes, and that the frequency of the two conditions is in proportion to the presence and duration of goiter in the community.

It will require further investigation to explain the occurrence of the disease in such large numbers in families where goiter already exists. We have studied groups of families in Colorado Springs in which the original member developed goiter while living in other states. The striking fact from the observation indicated that many girls and an occasional boy of the goiterous mother would develop goiter, and virtually all the girls and a goodly number of the boys of the third generation would become affected. It was further interesting to note that no other family in the same block or locality developed the disease, while goiterous grandmothers had many goiterous offspring altho buying groceries from the same store and drinking from the same water supply as their more fortunate neighbors.

Since the knowledge of goiter began, water supply has been considered a factor in the occurrence of the disease. Livingston tells that the inhabitants of Central Africa held this belief. Barton also states that the Indians of America thought that water was responsible for goiter. Many experiments by different investigators confirm the same opinion. If water is the cause; is it the absence or the presence of some substance contained therein that upsets the thyroid?

Bacterial infection is comprehensively explained by many scientific workers.



In the South, for many years, inhabitants took mercury frequently on account of malaria, and goiter affected the population to a minimal degree. Could the frequent disinfection of the intestinal tract have been the preventive agent, thus protecting the population in a measure from the spread of the disease?

The opinion that the colon group of bacteria is a causative factor is held by many investigators.

Is it thyroid need for iodine that is the cause of goiter, or is it the required normal iodine content of the blood necessary to render the infectious agent impotent, thereby acting as a buffer against the invading organism? Physiology of the glands clearly shows that the gland is normally flooded with iodine (more than any or all organs combined). Logically, inference could be made that when the threshold of iodine is lowered the organ is crippled, thus giving the invading organism a free hand for attack. (Many believe this true. No proof is in evidence that it is not).

A large group of investigators is committed to the theory that goiter is a deficiency disease. Marine and Kimball are its outspoken proponents. Small amounts of iodine are necessary to satisfy the physiologic demands of the thyroid and combat the agents that cause the development of goiter; be the cause lack of iodine or infection.

Is the normal content of iodine in the blood sufficient to prevent the original pathology and subsequent goiter? If so, in the event of inadequate iodine percentage, how are we to normalize the iodine content in all individuals and what methods are we to adopt to determine such a percentage in the blood stream?

The problems of thyroid pathology are more unsettled than any other phase of the subject. Some authorities assume that all pathological changes are one and the same, seen only at various stages of the diseased gland. Graham states, "except for such differences as may be due to variations in intensity and duration of disease, we find it inconsistent with our personal experience to accept diametrically opposed clinical entities. From the standpoint of pathologic anatomy of the thyroid there appears to be insufficient grounds for a fundamental distinction between the two so-called types of disease. We have no alternative but to regard diffuse and nodu-

lar goiter "as clinical variations of a single morbid state."

The inability to recognize the symptoms of goiter, by the profession at large, is a problem of great concern. Coordination of symptoms in a simple manner, in order that the clinician may constantly bear them in mind—that is, have them on his finger tips for differentiation—is of much importance. We have arranged them into the following groups:

#### A.

1. Extremely nervous.
2. Apprehensive.
3. Fearful.
4. Irritable.
5. Very restless.
6. Forgetful.
7. Depression.
8. Melancholia.
9. Insomnia.

#### B.

1. Tremors of closed lids or extended hands. (Most conspicuous sign).
2. Leg and knee weakness.
3. Feels worse in morning.
4. Subjective feeling of heat.
5. Sweating. (Moist hands.)
6. Tires on exertion.
7. Short breath on climbing stairs.
8. Swollen lids.
9. Urticaria.
10. Falling of hair.
11. General weakness.

#### C.

1. Active delirium.
2. Loss of weight.
3. Increased appetite.
4. Vomiting.
5. Diarrhea.
6. Tachycardia.
7. Auricular flutter.
8. Auricular fibrillation.
9. Heart pounds when lying down.

#### D.

1. Injected conjunctiva.
2. Glistening eye.
3. Stellwag.
4. Darymple.
5. Exophthalmous.
6. Discoloration of hands.
7. Erythemata neck and thorax.
8. Pigmentations.
9. Dry skin.

10. Curved fingers. (Not so valuable a sign).
11. Metabolic rate.
12. Goetch's test.

We call your attention particularly to sweating of the hands. Hands may be either hot or cold; all depends on the nervous state of the patient at the time of examination. This symptom also applies to only a certain group of patients. (In a patient suffering from an old nodular goiter, toxic, thin, weak, wrinkled—the skin will show marked dryness in place of being moist).

Short breath on exertion may be due to cardiac impairment, muscular weakness, or pressure.

Eye symptoms are of no value in the early development of goiter. It is a late symptom in about 20% of the diffuse type. This organic symptom is a family diagnostic point. The physician should have recognized the condition long before these symptoms appeared.

Early recognition of goiter is a problem of great importance to the patient. This suggests to us the question: If goiter, particularly the diffuse type, is recognized early, can it be cured without surgery? Many are answering the question affirmatively and, who knows, if we become skilled in its early recognition, that all will be of the same opinion. Consequently, the problem of early recognition is of great importance to the student of thyroid disease.

Interpretation of the symptomatology of acute hyperthyroidism is easy of accomplishment. Atypical cases tax the skill of the most learned diagnostician. Many of us are in the same position today in regard to thyroid disturbances as we were toward tuberculosis, thirty years ago. Unless the patient had frank symptoms of second stage tuberculosis, the disease did not exist. The same opinion relative to goiter obtains—unless the patient is dreadfully ill and has classical symptoms, he must be suffering from some other illness; certainly not goiter. Remember a patient can be sick from goiter and evidence few of the classical symptoms of the disease. This is the so-called irregular group.

The chief diseases to be differentiated from goiter are early tuberculosis, cardiac disease, neurasthenia and neuro-circulatory asthenia; not forgetting that goiter

may exist with either of the above mentioned.

The basal metabolic rate has been considered a most valuable diagnostic aid. More and more, however, the trained student is realizing that its interpretation is less important. A patient may have a normal or a minus B. M. R. and be exceedingly ill from goiter. He may even have a slow pulse and a history of gaining weight. (Atypical case).

While tachycardia is the most constant and probably the earliest sign in toxic goiter, a normal pulse rate is not incompatible with the disease.

Neurasthenia is very difficult to differentiate. We shall offer you the following questions for your consideration: Can a patient be a neurasthenic and suffer from goiter at the same time? Does neurasthenia prevent the development of goiter in an individual? Are patients being denied the right of treatment for goiter on account of the presence of neurasthenia?

Pressure symptoms have been discussed—often incorrectly. Small, hard, diffuse goiters produce pressure much more often than the large colloid. It squeezes the trachea and produces a definite discomfort.

When there is pressure in the neck, if the patient complains of a "lump" or "ball," look out; but a constant, actual pressure, constricting at times, must be considered of importance and of some value.

No discussion of the problems of goiter is complete unless special mention is made of iodine. When and how to give iodine is a question that is often put by the physician and the reply is not always so easily understood, since many statements made by us seem to him a paradox.

Let me warn you not to put too much dependence in iodine. Cases are being placed in the mortality column by such confidence. Not a few hospitals, soon after the adoption of pre-operative iodine prevention, recorded higher death rates. In the critically ill rely more on rest, medication, food and liquids and most of all do not be in a hurry to operate. Iodine can be administered to the acute cases and no harm will result; in fact, it is good treatment and can be continued at intervals for some time. I do not think that it has been the fault of the administration of iodine that has caused the surgeon so



much trouble, but too much reliance in the agent itself and the neglect of other preparatory measures that have in the past served us so well. "Iodine tolerance," following its administration to acute cases, is more fancied than real. Increasing experience seems to have justified this opinion. These cases are quite similar to those seen heretofore, before the new epoch of iodine prevention came into vogue. Forget the humbug about "tolerance." It is all wrong. If the bad risk patient improves, return him home for a while, until improvement takes place sufficiently to place him in the operative group.

We should remember that iodine rarely, if ever, cures goiter. Some patients undergo a remarkable improvement. Many of the so-called "cures" show a tendency for a recurrence. The distinction between the treatment with, and the prevention of diseases of the thyroid gland with iodine is not fully understood and appreciated by our profession. Confusion and misunderstanding exist among the people. They have interpreted the prevention by means of iodized salt as a curative measure and are taking iodine in the hopes of relief. Do not give iodine, of course, to the non-toxic case, as it will do no good. In the child with a soft fullness in the gland, reduction in its size will take place from its administration, but do not expect a cure, for sure as fate, nodules will appear later in life.

Massive doses of iodine seem to be responsible for so-called "iodine damage"

Compulsory administration of iodine in any form is not acceptable to the American people. Iodized salt should be popularized, even though these small doses might be provocative of harm to a definite percentage of individuals. If iodized salt could be used by individuals not affected with goiter, in every household, it would prevent the development of goiter in the second generation.

Regulation of so-called, well advertised "goiter cures," containing large quantities of iodine, would prevent many of the so-called cases of iodine basedow. If these advertisers could be checked in some manner, much good would come to the individuals suffering from goiter.

Definite results have been shown by Kimball and others in the prevention of thyroid conditions. European countries confirm their results.

One of the simplest manners to adminis-

ter iodine to children is two grains of sodium iodide twice a day for two weeks, twice a year. Notice the twos.

One of the problems is to take the information of the prevention of goiter to the doorsteps of every doctor in our country. We must interest them in the subject of prevention, consequently the problem that shall have to do with the dissemination of knowledge relative to the means and methods of prevention is of greatest importance.

Marine's aphorism, "one milligram of prevention is worth more than a thousand milligrams of cure," is apropos. Z

Agencies that may be used to put forth such measures are:

1. More papers should be read before organizations, both local and national, relative to the prevention of goiter. In fact, the subject should be discussed at every medical meeting of importance, particularly the obstetric and pediatric societies.

2. *Obstetricians*: Obstetricians should be urged to remember that the presence of goiter in the mother is of great importance in the genesis of congenital goiter in the offspring. An observation in Colorado Springs, with families in which we have been able to study the hereditary feature in three generations, proves quite conclusively the more common occurrence of goiter in these families.

It is the duty of the obstetrician, pediatrician, practitioner, as well as the surgeon, to learn the symptoms and recognize not only the hyper, but also hypothyroid states in the expectant mother and administer for the latter condition thyroid extract and, if you please, iodine, and thus in a measure safeguard the health of the prospective offspring. He should bear in mind that not only hypo but also hyperthyroidism produces sterilization and, furthermore, that either or both may produce the procreation of physically undeveloped offspring. Many have noted that the administration of thyroid extract and iodine in some form to sterile women has resulted in pregnancy, and its beneficial effects are also noted in habitual abortions and in groups in which lues has been excluded.

Prophylaxis should be begun before birth of the child. Probably better be instituted by administration of iodine to the goiterous parent before gestation

takes place. Certainly it should become his duty to administer this prophylactic measure during gestation and throughout childhood.

Early recognition of congenital thyroid disturbance and the prompt administration of thyroid extract to this group seems all we can do to prevent (in a great measure) mental retardation and certain physical stigmata which are so certain to develop in children whose parents suffer from endemic goiter.

What a tragedy for the family and a remorse it must be for the physician who failed to administer iodine and thyroid extract to the expectant mother of such procreation. In our own surgical experience we have observed many such examples. For instance, mother afflicted with goiter and deaf-mutism. Her only son and daughter; both fine in physical stature, daughter a beautiful character; both are deaf-mutes. Parents admitting no knowledge of the whole affair.

Many such tragedies are being enacted throughout the states, and not necessarily where endemic goiter exists. Goiterous parents should be advised of such exigencies and instructed to safeguard their offspring.

It is to the discredit of this group of well informed men that so little is being done in a prophylactic way for those who must bear the burden of gestation and bring into existence a host of little sufferers who must face the stigmata of an inherited physical and mental weakness throughout life.

3. *Public Health Officials*: Goiter has attained proportions in America of a public health problem and means of prevention should take a prominent place in affairs of our city, county, state and national health bodies. All cities and many small towns maintain health boards. All states have health officers. It should be their duty to study this group of mentally deficient, tardy in their school work—also the mothers, for hypothyroidism.

Nothing should be left undone to arouse the enthusiasm of the people to this impending danger. A condition so well known to European countries, who are already overburdened by this shameful calamity.

The function of the department of health should be to inaugurate surveys and to instruct the public in the causes of

goiter and established principles of prophylaxis, furthermore maintain follow-up surveys to determine the efficiency of such plans of prophylaxis.

Health departments have exerted a tremendous effort to build up community immunity to diphtheria. Goiter prevention can be accomplished in a much more simple and safe manner, still the subject is rarely, if ever, mentioned in campaigns of prevention.

Since prevention has been proven a surety, our health departments should betget themselves about this most serious business and thereby checkmate this impending calamity of no mean proportion.

4. *Government Boards of Health*: Every country, state, province, county and municipality, as well as the public schools, should work under a goiter commission. Some of the European countries are demonstrating the value of such commissions. With our excellent health boards throughout America, its organization would be of easy accomplishment. The additional duties, to our already efficient and well organized health departments, would be of small moment.

5. *Pediatricians*: If the thyroid gland plays an important part in the physical and intellectual growth of the child, surely this fact should furnish much study and effort for the pediatrician. Preschool age must be under the influence of the pediatrician or family doctor if the child is to have the advantage of ideal prophylaxis and the nation is to be relieved of the physical and mental suffering (and death), besides the assumption of economic responsibility of caring for a group of cretins, idiots, and deaf-mutes.

6. *Child Welfare Organizations*: During child welfare week much discussion about, and free preventive treatment is given for diphtheria and other similar conditions, and no mention is made of measures to prevent the development of goiter and its resulting direful consequences.

7. *Schools and Universities*: Educational influences must be utilized to spread knowledge of prevention. It is the duty of health boards to undertake to promulgate the principles of prevention in this particular field of endeavor. Public schools offer large opportunity for inaugurating a plan of prophylaxis of goiter in children.

Public schools are in touch with probably 90% of the children of the country,



thus furnishing ample opportunity for free administration of preventive treatment twice a year at an age when most good can be accomplished. Children are anxious to be well and virtually all would elect to take this safeguard if the matter was put forth to parent and child alike. Very few would object to the plan. This procedure would touch all America, since compulsory education obtains throughout the country.

In our periodic health examination of school children much has been done to vaccinate against small pox, recommendations for adequate treatment for diseased tonsils, chest conditions, etc., while nothing has been done to initiate prophylaxis against goiter.

Applicants for instructors in the public schools are given physical examinations to determine if they are free from contagious diseases. Applicants are rejected if such contingencies exist. Little or no attention is given to the instructor affected with goiter. Such an individual, suffering from a deformed neck with its accompanying nervous tremor, etc., is a poor example to the child of the serious consequences of the existing malady. Certainly it leaves the impression on the observing student that the condition is of no moment (by daily contact). Such a teacher should be advised that the stress and strain that goes with the arduous duties of an instructor is not compatible with an individual suffering from goiter. Employment should not be interdicted, but the serious consequences should be put clearly before such an individual.

8. *Hospitals and Clinics*: In the outdoor maternal departments of hospital dispensaries (out patients) special mention of goiter prophylaxis should be made to mothers who come for advise as to prenatal care. This instruction would aid materially a group of individuals who have no opportunity to learn of the harmful effects of goiter on their offspring in any other way.

9. *Surgeons and Physicians*: Of great importance is the interest of the physician at large. It is he who comes in contact with the people generally, hence his influence is of great value on account of his daily contact with the entire population, and at ages when preventive measures can accomplish the most good.

The attention of the medical profession is called in a general way, because so lit-

tle is being done by them to prevent the occurrence of goiter throughout America. A small but distinguished group of specialists are devoting themselves in a most generous fashion to stamp out the malady. If results are to be obtained all must assume the responsibility.

10. *Press*. There should exist a willingness on the part of the physician to develop a better mutual understanding with representatives of the press—"the most potent force affecting modern life."

The public is being taught that many diseases are preventable and they are learning that it is of much more importance to keep well than they heretofore realized. The press has done much by its cooperation with the medical profession to bring this much desired situation. We, as physicians, must admit that our hesitancy and reticence was in a measure responsible for the slow manner of disseminating such knowledge in this manner to the public and for this reason, no doubt, the quack and faker found easy sailing in peddling his wares and the public became informed about matters of medicine not founded on fact but misrepresentation and greed.

The press is interested in its readers and ever ready to safeguard the welfare of the nation's greatest asset—HEALTH.

The layman is not only desirous of acquiring the knowledge of the possibilities of preventive medicine, but demanding the information about medical and health matters and he is looking more and more to the press for this information as the press is the medium from which most of his knowledge, scientific or otherwise, is derived, for the daily press is consulted and read more consistently, probably, than all other literature of the world, and hence is more instructive than all other combined agencies.

If we are to enhance our usefulness and extend our helpfulness in preventive medicine, we must appeal to the press.

Both physicians and the press desire that the knowledge of preventive medicine be given to the peoples of the world. That neither of us can do much without the aid of the other must be admitted.

In considering the problems of goiter, I would especially like to make mention of the patient suffering with serious cardiac disturbances. This group is worthy of special mention. Many are quite ill,

some are cachectic, emaciated, suffering from dyspnea, while others are edematous to marked degree. Rest, proper food and medication will place most of them in the operative column. I shall suggest only one drug that, to me, has accomplished more than all others in the dropsical types. I refer to salyrgan, administered in an intravenous way. Barring sedatives, it will supplant all drugs—even digitalis can be dispensed with until the fluid has disappeared. The effect of the drug is marvelous, the results are magical. It seems to benefit this group of individuals in a selective manner. May I suggest the advice not to ever discard a seemingly hopeless cardiac of goiterous origin until this drug has been well tried out? If the group can be brought to operation, the procedure is quite safe, the improvement is rapid and definite, and the thyroid state is not existent. Some of the damaged hearts do not entirely recover, but the patient is in a liveable state.

May I say that the status of surgery is a late day treatment? The disease has progressed over a long and definite period, before it becomes necessary to operate. In the early stages the disease might possibly be medical; late in the day, however, the condition is surely surgical. Not necessarily that the disease will destroy its victim, or permanently cripple him, but the law of averages is such that the condition should be classed as surgical; and certainly should be considered so as confidently and wisely as appendicitis or gall stones is considered surgical. Not all the individuals affected with the above two conditions will end in disaster if not subjected to operation, but none will question the wisdom of the course in such conditions. Consequently, such should be the attitude of the medical profession in a well developed case of goiter.

Pre-operative, operative technique and post-operative treatment are not germane to this discussion. However, I would like to suggest that surgeons doing occasional operations for goiter should refer the more difficult and seriously ill patients to the more trained surgeon. There are two good reasons for this—first, it gives this class a better chance for life; and second, it lowers the mortality in his individual work, thus safeguarding his reputation and lending encouragement to a large group of patients who are suffering with thyroid disease.

DISCUSSION: *Dr. Robt. M. Howard, Oklahoma City.*

I feel that we have been very greatly honored today in having Dr. Shivers give us this paper. Dr. Shivers, you know, is the president of the American Association for Study of Goiter. He came here and gave the type of paper we felt he would give. We hear too many papers on the technique of operation, etc. He has covered the subject in a very broad manner, and I think a manner which is of interest to all of us, whether physician or obstetrician, or general man, or whatever line of work we may be in. I am very pleased indeed to have been able to listen to a paper of this type, because I feel that to organizations such as this it is of considerable importance. Dr. Shivers covered the subject rather widely, and the emphasizing of some of the points he has made is all that I want to do. He spoke of the classification of goiters. For a long time we have been insulted with a long classification of goiters that none of us could tell and that didn't mean very much to us. In the study of any disease, a simple classification means a lot, and after a good deal of study and work the general classification or classifications of clinical types of goiters have been reduced to a very simple classification and one that I think gives a better conception of the subject. The diffuse type of goiter without toxic symptoms, the diffuse toxic goiter, the nodular type of goiter without toxic symptoms, and the nodular toxic goiter covers the whole subject. We are able to place our cases in one classification or the other. Dr. Shivers spoke on the cause of goiter. Intensive study is being made all over the world on that subject today. There is a lot that we do not know about it now. Contributing causes we know exist, but the actual cause of the condition itself we do not know. Perhaps in the typical case of toxic goiter, whether the diffuse or nodular type, the diagnosis is quite important. The questionable cases are those that we have difficulty with. I think in men doing a great deal of work, people come to them for their work, if you operate a patient in the neighborhood, whether in the city or the country, you are going to have three or four women from that immediate neighborhood who are more or less disposed to be neurotic coming in. They tell you, "Doctor, I have had a choking feeling lately." "Choking is not a symptom of toxic goiter; it occurs only



in large goiters or in the type that produces pressure on the trachea. But when your patient tells you that she has choking you have to work them out completely, but you can venture half of the time there isn't a goiter at all. That is not a symptom of goiter. The symptoms are fairly characteristic. One point I mention and that is this, in dealing with this early type of toxic goiters it is of importance, as Dr. Shivers brought out, that we recognize them as early and deal with them before damage has been done that will prevent the patient from returning to normal following any operative procedure that may be advised. It is important to diagnose them early, but I believe it is of more importance to wait until your questionable case has developed the typical symptoms before you attempt to do surgery. Otherwise you are going to be operating a certain number of patients that you won't do any good. Early recognition of tuberculosis, cardiac conditions and particularly neurasthenia in distinction is pretty hard, but I am satisfied that if your patient has and is developing a toxic goiter, if you wait a while those questions will become unquestioned. It isn't any fun to go through the operation with its many dangers and establish that our patient was not suffering from what we operated for. I don't place too much dependence on the basal metabolism. Probably often goiter may be diagnosed that way, but it varies so much in individuals and so much in the different nationalities that except from confirming what we already know and believe, I doubt that it is worth very much. Iodine in goiter is a question of extreme importance. In prophylaxis it is the most important thing we can do. Unfortunately, it has been greatly abused in the treatment of toxic goiters and as a result many of the patients who are coming to us are difficult to prepare for operation. Now, I think the physician who sees the goiter patient first should decide definitely how he is going to take care of that patient. If the patient is toxic we may believe the best thing is submit him to an operation, the patient may not believe that and he may believe it. If you are going to submit him to surgery, don't give him iodine except ten or twelve days before operation. If you are going to treat him, go on and give him iodine. I think these people with toxic goiter are better off to get iodine than to do without. That is contrary to the prevalent opinion; it is rather thought that if you give people

with diffuse goiter iodine that you are going to do them a great harm. I think it is a fact that they are better off taking iodine than without it. They will be much better off if they ever had it if you continue with it. Decide on these patients. If you are going to have them operated don't give them iodine but if you are going to treat them it is all right. One other point he didn't go into very extensively, and that is prevention of goiter. To obstetricians and health officers that is of extreme importance because goiter is a condition that is unquestionably increasing in our country and unless it is checked we are going to have what we see a great deal of in Switzerland—we are going to have a lot of cretinism. That isn't something that comes on after one or two generations, but let them go a little longer and you are going to see more of it. You don't see many now, but visit Switzerland or the Himalaya mountains and you will see the terrible burden caused by the development of cretinism. One of our important problems today is the prevention of goiter.

*Question:* Two years ago we were told that every pregnant woman should have iodine. I should like to ask when should thyroid be given to apparently normal woman, and what does the basal metabolism reading have to do with it?

*Dr. Shivers:* I feel that my paper was hardly suited to a section. I prepared a general paper because I was under the impression that all met together in a general assembly. Now this question, under what condition would you give a healthy expectant mother iodine. In a perfectly healthy, normal, expectant woman I wouldn't give her iodine, neither would I give her thyroid extract. In hypothyroidism I would give her thyroid extract and maybe iodine. The basal metabolism is elevated during pregnancy, so a normal increase in basal metabolism would not be an indication for either thyroid extract or iodine.

—O—

Oscar Richter, Arthur E. Meyer and Andrew C. Ivy, Chicago (Journal A. M. A., May 7, 1932), have prepared an extract of horse liver which is low in total solids (1.8 Gm. from 100 Gm. of raw liver) and of which an oral administration induces a complete remission in pernicious anemia. A preliminary study of the comparative concentration or potency of the antianemia principle or principles active in pernicious anemia present in horse and cattle liver suggests that the concentration may be greater in the liver of the horse.

## CAUSATION AND MANAGEMENT OF SIMPLE GOITER\*

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Disturbances of the thyroid gland have commanded the attention of the medical profession for many years, but in general, it may be said that consideration was given only to the toxic conditions. Less thought was directed to the management of the supposedly innocent goiters of adolescence. It seems reasonable, in order to prevent toxic goiter of later life and conditions of hypothyroidism, care of early goiters is of paramount importance, especially in this era of preventive medicine.

Bram conservatively estimates that over five million people in the United States are suffering from goiter. It is true that this section of the Southwest is not in the great endemic areas as: the Great Lakes Basin, Minnesota, Washington, Oregon, and the Dakotas, but the condition is prevalent enough that some thought should be given to its prevention and management.

Too often the slight swelling observed on the necks of high school girls is ignored, and parents are assured that by taking a little iodine, the patient will outgrow the condition. But the effects do not go away so easily, although the swelling disappears. There may be functional and circulatory changes that produce permanent pathological changes in the gland, and under the stimulus of infection, overwork, pregnancy, or continued deficiencies in mineral salts and iodine, adenoma or Graves' disease develop.

In reviewing the histories of toxic adenoma patients, it is found that a good percentage have had a juvenile or adolescent goiter.

In the United States there are more deaths attributed to cardiovascular disease than any other general classification. Sloan contends that at least eighty per cent of cases of cardio-vascular disease are attributable to goiter in one form or another. It has been shown that cardiac decompensation associated with hyperthyroidism quickly regains cardiac compensation, when the thyroidism is removed; whereas, cardiac decompensation due to other conditions, as intra cardiac or car-

dio-vascular-renal origin, does not regain compensation readily. I have seen these patients so decompensated that they were laboring for breath, and were even unable to lie down comfortably. Ordinarily they would not be considered possible candidates for any type of surgery. With a few days of cardiac management, a subtotal thyroidectomy may be performed with an uneventful convalescence, and they are able to resume their economic activity within a short period of time.

Thyroid dysfunctions produce perhaps more mental degeneracy than any other disease. We will not discuss the psychosis associated with hyperthyroidism, but with the sub or hypothyroid conditions. Clinically, we find the excitability of the whole vegetative nervous system diminished; this will vary with the amount of hypothyroidism present. Also, there is a slowing down of the entire metabolism. Breitner states that, "after five generations of colloid goiter, we can expect to find deaf mutism and idiocy." That should suggest that the expectant mother who has a colloid goiter, or evidences of a hypothyroid condition, should receive appropriate treatment to prevent the child from being a hypothyroid at birth. This was clearly shown by a case seen with an associate. He had under his care three children that demonstrated many of the clinical signs of hypothyroidism; such as, mental and physical retardation, broad spade-like hands, short little fingers, pot bellies with umbilical hernias, dry skin, coarse hair, large thick tongues, drooling of saliva, and delayed ossification of the wrist bones. The mother of these children had a large colloid goiter, and she also had the clinical signs of hypothyroidism of an adult, with a basal metabolic rate of minus 32. During the next pregnancy, she was given thyroid therapy, and the child was normal in every respect. Following this she moved away from the locality, and within the last month consulted this associate with another child, a very definite cretinoid. She neglected to take thyroid therapy during this latter pregnancy. Dr. E. P. Allen of Oklahoma City several years ago was giving considerable thought to the problem of thyroid deficiency of pregnancy. He was taking the basal metabolic rate of his obstetrical patients, and administering thyroid therapy to the cases that were in need of it. This seems to be a step in the right direction for two reasons: first, it

\*Read before the Oklahoma State Medical Society, Tulsa, Oklahoma, May 25, 1932.



will prevent the child from being a hypothyroid at birth; and second, it may prevent the formation of a colloid goiter during pregnancy, or the stimulation of a nontoxic adenoma to that of a toxic adenoma. A good percentage of these patients state they had a nodular goiter without symptoms, but following one or more pregnancies, toxic symptoms developed.

In reviewing the literature as to the causative factors of this affection, one is impressed with the various theories, and the vast amount of clinical work to support each theory. Also, one factor that may be of the utmost importance in the causation in one country, would be of only a secondary importance in another.

Breitner reports a family that moved from Germany to a place between Vienna and Budapest. Within a short time the parents, the five children, and the domestic animals (cat, dog and jack ass) all had developed goiter. On investigation, he found that they received their drinking water from a well on the premises. He advised boiling the water, and within a short period of time all of the goiters had visibly disappeared, only to reappear when they again used the water unboiled. Analysis of the water revealed that it contained over ten thousand parts of iodine per billion, which is sufficient to prevent goiter.

Goiter is quite prevalent among Mexican girls in Las Vegas, Santa Fe and Roswell, New Mexico, but it is quite rare among the white population. Both receive the same water supply; so it could not be incriminated. The sanitary and hygienic conditions among the Mexican population are very poor. They live in small houses, which are poorly ventilated, and are overcrowded—often the whole family living in one room. Also, their diet is radically different from that of the white population, there being very few vegetables, fresh fruits or milk used; but a preponderance of proteins in the form of meats and beans, and carbohydrates in the form of corn meal preparations.

McCarrison is an advocate of the toxic infective theory, and he has had extensive experiences in India to substantiate his beliefs. One of his experiences is worth recounting. In Sanwar, Punjab, a small village, practically the entire population had goiter. The substitution of a pure for a contaminated water led to the disappearance of the goiter. The pure water showed on analysis to be practically free

of iodine; whereas, the contaminated water had a substantial amount of iodine. He came to the conclusion that there was a positive toxic agent derived from the gastro-intestinal tract, and there was not an iodine deficiency; that the toxic agent may be capable of fixing the ingested iodine in the intestinal tract, and prevent its absorption. The iodine content of the water was sufficient for physiological needs. He often employed intestinal antiseptics as thymol and salol, or endeavored to change the intestinal flora with *bulgaricus bacillus*.

In the United States the iodine deficiency theory seems to have the most adherents. Our population is iodine minded; that is, iodine is used indiscriminately by both the laity and many of the physicians. They do not realize that iodine is indicated only in certain types of goiter, and that it should be used judiciously under the supervision of a competent physician.

Kimball working with the Michigan State Health Department in 1924 made surveys and water analyses in several counties, and found that the incidence of goiter in Houghton county, where the iodine content of the drinking water was nil, to be 58 per cent among the boys and 70 per cent among the girls in the schools. While in Midland county the iodine content was 7.3 parts per billion, the incidence of goiter was 24 per cent among the boys, and 41 per cent among the girls. Iodized salt was used in the homes of the school children in the city of Midland, and in 1928 another survey was made. It was found that the incidence of goiter had fallen from 41 per cent to 8.8 per cent among the girls.

The theory of multiple causation seems most practical; such as, water pollution, dietary, iodine and mineral salts deficiencies, overwork, infections, insufficient hours of rest, and rapid growth.

A deficiency in iodine could not be the sole cause, for in the case of Houghton, Michigan, where the iodine content of the water was nil, there were thirty per cent of girls and forty per cent of boys not affected. McClendon found where there was a scarcity of iodine in the water, there was also a scarcity of iodine in the green vegetables grown in that vicinity. Kimball reports the case of a boy that grew almost a foot in a year, and developed a very definite goiter, even though he was taking iodine.

Simple goiters should be divided into two classes: parenchymatous and colloid. If this classification is recognized, better results will be obtained in treating them.

A parenchymatous growth is a gland trying to increase its function by enlarging. This enlarging may be by the production of new tissue, hyperplasia; or by increasing the size of the tissue present, hypertrophy. There is a decrease in the colloid material, the lining epithelium is of the low cuboidal type, and later columnar, and there may be infoldings and plications. There is a symmetrical enlargement of both lobes and isthmus. This is the earliest form of goiter, and when found in males, may persist into young manhood.

Colloid goiter develops in the above form when the individual reaches the late teens, or young womanhood, or during pregnancy. There is a storage of colloid in the acini, the lining epithelium is flattened into the low cuboidal type, by the distension of the colloid. There is a symmetrical enlargement of both lobes and isthmus, and the gland may be from two to ten times the normal size. Pressure symptoms are seldom present. Its consistency is soft or elastic. There is usually a mild hypothyroidism, and the basal metabolic rate is below normal, from minus five to minus twenty-five. There is an absence of bruits, pulsations, or throbbings in the gland.

Occasionally it is necessary to differentiate between the above forms of goiter and foetal adenoma. The latter belongs to the classification of true tumors of the thyroid. They usually appear as solitary nodules, resting on normal thyroid tissue, and may be observed in very young individuals. The tissue of the foetal adenoma is about the same as that found in the thyroid of a four months foetus. The growth of the tumor is very slow, but persistent, and is not subject to the periodic progressions and regressions that are common to the normal thyroid gland. As growth progresses, there may be degeneration and cyst formation, or it may become slightly toxic, or malignant.

#### MANAGEMENT

In the management of the goiter patient, it is imperative that the patient be under the constant care of the family physician.

Control of infections, both systemic and local, and correct constipation if present.

If the water supply is polluted, use boiled water and intestinal antiseptics; such as, salol and thymol, or change the intestinal flora with *bulgaricus bacillus*.

See that the patient has a liberal diet, including fresh green vegetables, fresh fruits, butter, cheese, eggs, whole wheat bread and sea foods.

Sufficient rest, if necessary a rest period in the mornings and afternoons, and moderation of exercise.

If the patient has a parenchymatous goiter of puberty, iodine is of distinct value, and can be given in one of the many forms. In the younger children the syrup of the iodide of iron, 5 minims in a suitable vehicle daily is preferred; Lugol's solution, minims 2 daily in alternate months for older children.

The presence of a colloid goiter demonstrates that the function of the thyroid is below normal, and by supplying thyroid substance, we can rectify the deficiency and eliminate the goiter. Thyroid extract and thyroxin should be administered, care being observed not to get a thyroid intoxication. The taking of the basal metabolic rate at frequent intervals should be of value. Usually a colloid goiter will disappear under this treatment within six months to a year, but the patient should be under constant observation for two or three years.

If the obstetrical patient has a colloid goiter, she likewise will respond to the above type of therapy. However, it should be remembered that the basal metabolic rate is increased after the sixth month of gestation, and is about plus 15 to plus 20. If there is clinical evidence of hypothyroidism present, administration of thyroid extract to the mother will prevent the child from being a hypothyroid at birth.

#### CONCLUSIONS

1. The management of simple goiter is often neglected.
2. The obstetrician can prevent congenital hypothyroidism by appropriate treatment of the expectant mother,
3. The theory of multiple causation of simple goiter seems most practical.
4. The indiscriminate use of iodine in the treatment of goiter is detrimental.
5. Better results can be obtained in treatment if a differentiation is made between parenchymatous and colloid goiter.



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DISCUSSION: *L. S. Willour, M.D., McAlester, Oklahoma.*

I want to discuss briefly the pathology of goiter as described by Aschoff. The goiter problem is centered in that of diffuse goiter. This diffuse goiter is intimately related to the physiological variation in the development and in the functional activity of the normal thyroid gland. In a study of the material at John Hopkins Hospital, it was determined that following the hypertrophy and hyperplasia of the new-born, after puberty and after pregnancy, there occur involutional changes in the thyroid gland. These involutional changes are within certain minor variations similar to those of hyperthyroidism. The milder the degree of hypertrophy and hyperplasia the less obvious are the histological changes of involution, but though slight, these changes are just as definite.

These histological changes of involution are deduced as the structure of the gland approaches normal or undergoes a regression following physiological over-activity. The fact that these manifestations of histological activity occur at certain periods in the life cycle, would seem to indicate that these changes are secondary instead of primary, the cause of the physiological enlargement of the thyroid gland

being extraneous. The gland enlarges primarily as the result of hypertrophy and hyperplasia, and an increased circulation through it and is further enlarged as the result of subsequent involutional changes.

It has also been observed by Aschoff that beginning with the puberty hypertrophy, nodules or tumor-like masses first begin to make their appearance in the thyroid gland and continue to increase as to number and size during puberty and in the later periods of life. The incidence and average number of these nodules or tumors in the thyroid gland is the same whether the gland comes from a goitrous or a non-goitrous region. The only difference between them being solely one of actual size, consequently, a quantitative and not a qualitative difference.

Aschoff believes that the formation of these tumors, which he calls adenomata are secondary to that of diffuse goiter. He further states that this tumor formation always occurred with, or followed, but never precede the diffuse enlargement of the thyroid.

With this explanation of the pathology of simple goiter, it would appear that the position taken by the essayist in the management of the goiter patient is well-founded, as all extraneous irritations should be avoided whether they be from focal infections, intestinal toxemias, impure water supply, or dietary errors, and the close observation and proper management of the patient with any disfunction of the gland is imperative.

Thyroid changes may be a dominant factor in the production of sterility, miscarriage, and certain toxemias of pregnancy. Pregnancy has an influence on the thyroid gland. Even thyroids usually called normal are subject to both anatomical and functional changes during the course of pregnancy. As a rule there are no indications of a change in function, but in a small percentage of cases there are symptoms such as nervousness, tachycardia, insomnia, headache, and an increase in the blood pressure suggestive of mild hyperthyroidism but without loss of weight or a definite increase in the metabolic rate above the normal. When this syndrome occurs it is noted between the fourth and sixth months of pregnancy. It lasts for from four to six weeks if not treated, but responds to iodine in a few days.

Pregnancy beginning during a phase of hyperthyroidism and continuing is rare. Hyperthyroidism favors miscarriage, usually in the first three months. Patients with a history of toxic cycles have a tendency toward recurrence of hyperthyroidism during pregnancy.

The pregnant woman with hypothyroidism presents a picture of mixed endocrine disturbance and is subject to toxemias, edema, albuminuria, hypertension, pre-eclampsia, and eclampsia.

#### DISCUSSION: *Question.*

In complete removal of a very large goiter a few months before conception, what effect might that have on the child, or is the mother to have treatment?

*Dr. Grosshart, Tulsa.*

This paper is a very interesting one and one on a condition that has given a great deal of anxiety. There is one aspect I think we have all lost out on—the hypothyroid conditions. There are so many of them and they range from just a mere overweight or overfat to where there are heart symptoms, slowness of the pulse and all those. If you run a basal metabolism on them you find they are all a little bit minus, and if given thyroid or thyroxin, some of them will improve and some will not. The patients that do not improve—and you stand a chance to run the same test on all of them to find out whether they will or not, run a urinalysis and find whether the amino acid is above or below normal, and you will find out which patients will respond to thyroxin and which will not. It is a simple matter, but it is a thing that has not been done. I recently read a report of patients that had been tested by the basal metabolism, and the literature spoke of those that respond and those that do not. By having a complete laboratory report you find that those who do not respond do not have a surplus of amino acids.

*Dr. I. W. Bollinger, Henryetta.*

I have been here two days and heard thyroid from bottom to top. When I came up here I thought I knew something about thyroids but I have decided I do not. They may be big or little, hard or soft; the patient may have a normal pulse or a fast pulse, you may have amino acids in the urine and you may not. I would like for this gentleman from Amarillo to tell us how you know a thyroid when you see it. You say the basal metabolism reading is

no good. The pulse may be fast or slow, and this and that and the other, and I would like for some distinguished gentleman with superhuman powers to tell me how you are going to know a hyperfunctioning thyroid or a thyroid that is not functioning, how are you going to know one when you see it. I am very sincere. I don't believe you can tell from the discussion in the papers whether you have a thyroid or not, or whether to operate or not to operate, whether to give iodine or give no iodine. I would like for somebody here to give us a clear conception of the idea, whether you have a thyroid that is diseased or not diseased. How would you recognize it?

*Dr. L. S. Willour, McAlester.*

I have been asked to open the discussion on this paper, but unfortunately I was out when called upon. I have prepared a brief discussion of Dr. Hendrick's paper; I was fortunate enough to have had a copy of it before I came here.

(Dr. Willour's Paper) \* \* \* \*

This paper is of great value to the general surgeon. At all times should we keep in mind the proper treatment of the patient who appears to present either hyper or hypo activity of the thyroid, and particularly should this be observed during the period of pregnancy. I want to thank you very much for this paper, I enjoyed hearing it.

*Dr. Hendrick: Closing.*

There are still a number of papers and we have not much time without encroaching on the time of others, which would be quite unfair, so all questions cannot be answered. You heard the definite classifications of goiter yesterday by the President of the American Goiter Association. Often these classifications are not recognized—we still think of them as non-toxic and toxic adenoma and Grave's disease. In relation to the doctor's question over here, when the patient becomes pregnant, if there is evidence of hypothyroidism I would give thyroid therapy in the form of thyroid extract or thyroxin. I am not going to attempt to answer Dr. Bollinger's question but we do know when we have a thyroid disturbance and when we do not. Also when surgical or medical treatment should be administered.



## SOME PHASES OF HYPERTHYROIDISM\*

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MCALESTER

Hyperthyroidism is present in three states: (1) in those having hyperfunctioning adenomatous thyroid, (2) in those having exophthalmic goitre, and (3) in those to whom thyroid gland or adrenalin has been given; and according to some to a prolonged use of iodine. We shall concern ourselves only with the first two classes; viz, toxic adenoma and exophthalmic goitre.

Considerable controversy has arisen and the literature is crowded at the present time in regard to whether or not the syndrome of hyperthyroidism associated with adenomatous goitre is a disease entity separate and distinct from exophthalmic goitre, or whether they are variations of the same disease. Despite this, there is an unanimity of opinion that exophthalmic goitre is more or less acute in its onset and course, with periods of exacerbations alternating with periods of partial or apparently complete remissions. Conversely, the toxic adenoma is of a chronic, insidious, slowly progressing type, and only after years manifests toxic symptoms. Meanwhile the patient undergoes treatment for early tuberculosis, chronic heart disease, nephritis, or essential hypertension which may be secondary manifestations of the ravages of the disease, the effect, and not the primary cause, of the patient's disability; meanwhile the true condition progresses unrecognized.

Plummer states that the function of the thyroid gland is to maintain a concentration in the tissues of 14 mg of thyroxin, or to elaborate and deliver to the tissues 0.33 mg of thyroxin daily. This thyroxin is a catalyst which accelerates the rate of heat production by elevation of the basal metabolism with a speeding up of cellular activity in general. We shall not discuss further the physiology or bio-chemistry of the thyroid except to state that it is assumed (Plummer) that in toxic adenoma there is an abnormally high concentration of thyroxin in the tissues which increases the basal metabolic rate, while in exophthalmic goiter the gland not only delivers an excess of normal thyroxin but that through some intense stimulation—

be it through the sympathetic system or through a hormone in the blood stream—there is produced and delivered to the tissues an abnormal product of thyroxin. This abnormal product in addition to its power to raise the basal metabolic rate has the capacity through its toxic action to produce exophthalmus, the peculiar nervous manifestations and a tendency to a gastro-intestinal crisis so commonly associated with the exophthalmic type of goitre.

The association of exophthalmus with a zone of white sclera above the iris, a peculiar type of staring with fixation of the eye for a few seconds followed by rapid blinking, tachycardia, tremor, goitre, and elevation of the basal metabolic rate are considered primary or cardinal signs and symptoms, and are pathognomonic of exophthalmic goitre, while concomitantly there are symptoms of secondary importance none of which is pathognomonic but in combination may suggest the condition when the primary ones are not conspicuous or are absent during a remission.

Prominent among these secondary symptoms are "purposeless movements" (such as buttoning and unbuttoning clothes, crossing and uncrossing the legs, fidgeting with the face and hair, etc.), muscular weakness manifested by difficulty in walking up stairs or by the Lahey test of having the patient sit well forward on a chair and raising the leg to a horizontal position with the knee extended—rarely can they hold this position for more than 30 seconds while the normal subject can do so for from 40 seconds to two minutes—diarrhea with or without vomiting, loss of weight despite an exceptionally good appetite, heat intolerance with sense of increased body warmth and with marked sweating and vasomotor instability; menstrual change usually manifesting itself by diminution or cessation of the flow, increased force of the heart at rest, the various nervous phenomena, and others.

Too often a small toxic goitre is diagnosed as early tuberculosis, neuro-circulatory asthenia, or neurasthenia. There may be a co-existing tuberculosis and hyperthyroidism. If so, radical treatment of the goitre is indicated, and then the patient is in a much better condition to overcome the pulmonary lesion.

Hyperthyroidism and neuro-circulatory

\*Read before Southeastern Oklahoma Medical Association, Atoka, Okla., Dec. 10, 1931.

asthenia have many symptoms in common such as palpitation, tachycardia, tremor, and nervousness, but the asthenic is pessimistic in contra-distinction to the usual optimistic attitude of the hyperthyroid, there is not the tolerance to cold, nor the increase of appetite in the presence of weight loss. Instead of warm hands the asthenic's are cold and sweaty, and the basal metabolic rate is normal.

In the final analysis it is the well controlled and repeated basal metabolic rate that makes the diagnosis, except during a remission in an exophthalmic goitre when one relies on the previous history and the imprints left by the previous attack, among which are increase in size and firmness of the gland, pigmentation of the skin, edema, exophthalmus, etc.

On the other hand it is recognized that the metabolic rate will occasionally be found moderately increased in lymphatic leukemia, polycythemia, and pernicious anemia, but appropriate blood studies will bring to light the underlying pathology.

Hyperthyroid cases of course are subject to other surgical conditions at times, and unless the accompanying condition is one of great risk to life, thyroidectomy should have priority.

The treatment of hyperthyroidism is surgical after the patient has been brought to a maximum degree of improvement, and this immediately brings to mind the administration of Lugol's solution. It cannot be over-emphasized that in hyperthyroidism Lugol's solution is never given for its curative powers but solely for the purpose of preparing the patient for the operative ordeal. It should be given only after a preliminary metabolic rate has been determined and while under the observation of those who will carry out the surgical measures; otherwise a false sense of security may be engendered in estimating the postoperative reaction by not knowing the true condition before Lugol's solution had been administered.

Lugol's solution will not cure hyperthyroidism.

#### REPAIR OF UNUNITED FRACTURE OF NECK OF THE FEMUR

According to Paul B. Magnuson, Chicago (Journal A. M. A., May 21, 1932), it seems incredible that one who is familiar with the pathology of old ununited fractures would choose to use a spike or autogenous bone graft as a spike to fasten the trochanter to the head through a mass of heavy fibrous tissue with expectation of obtaining any considerable mechanical support. To begin with, the trochanter is pushed upward from three-fourths inch to 2 inches above the acetabulum; then there is more or less complete absorption of the neck so that the fixation appliance must bridge a considerable gap where there is no bone; the head is usually in a rotated position whereby the trochanter cannot be brought opposite the fractured surface; and, finally, after the displacement has occurred and contraction has taken place with the heavy fibrous tissue filling the gap between the trochanter and the head, it is impossible to pull the leg down far enough to bring the fractured surface on the trochanter and the fractured surface on the head opposite each other, to say nothing of bringing them into apposition. The ends of the fragments are covered with hard, smooth, fibrous tissue which has reached complete maturity, and to expect bone to grow from either end of the fracture is to expect the impossible; one might as well place two surfaces of skin together and expect them to unite without first abrading the surface. The author has seen patients who have walked after such a nailing operation has been performed, but he has never seen anything in the roentgenogram following operation which would warrant the conclusion that there was a bridging by callus between the trochanter and the fractured surface of the head, and he believes that the patient's ability to walk occurs as the result of unusually heavy fibrous tissue formation between the trochanter and the acetabulum, forming a fibrous support which will hold more or less weight, depending on its density and the area over which it extends. He has never seen normal motion after such an operation, and it seems quite impossible, considering the shallowness of the head and the length of the gap to be bridged, plus the condition of the healed fractured surfaces, that any hope of a normal hip could be expected. Whitman recommended removal of the head, clearing of the scar tissue between the head and the trochanter, and the fitting of a remodeled end of the shaft into the acetabulum. Brackett advocated an operation which in most cases serves to reestablish anatomic relations better than any which have so far been advanced. The results have been so satisfactory to both patient and surgeon that it would seem that this operation should be more generally advocated. The technic of the operation is described in detail. The operation reestablishes as nearly as possible normal anatomic relations, leaves the head covered with normal cartilage in contact with the normal cartilage of the acetabulum, and therefore results in a painless hip with much freer motion than can be obtained by any other method. There is little surgical shock connected with the operation, and in patients of normal expectancy it can be performed without fear.



# THE JOURNAL

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### EDITORIAL

#### CHANGING THE MEDICAL PRACTICE ACT

Some time ago, after observing the impossible antics of certain members of their profession, the Oklahoma State Bar Association succeeded in so changing the law regulating their practice that the State Bar Association, itself, or through a board recommended by it could inquire into the fitness of any given individual to practice law, and, if the results of the investigation warranted, could revoke license to practice; the attorney in question, of course having the right to appeal to the Supreme Court. This, it is said has

worked unusually well. More than 100 attorneys have been disciplined, and now they are walking the straight and narrow path, a course, in many cases heretofore unknown to them. The Supreme Court has held the legislative act to be legal and proper.

Thinking over this; looking around them and observing some of the acts of certain types of physicians, some physicians have concluded that a somewhat similar act applicable to the medical profession would improve that profession. No doubt it would. But the question at once arises as to the ability of the legislature to act as it did with reference to the attorneys. In the first place the two professions were somewhat differently situated. The writer has undertaken to look up certain phases of the law as affecting physicians, and finds the following, in substance, affecting physicians.

Originally, before there was any sort of territorial organization, the various Five Civilized Tribes created boards which functioned somewhat on the order of the State Board of Examiners of today. It examined and issued to physicians a license to practice in the territory of the particular tribe in question. Some time after that Congress passed an act dividing Indian Territory into recording districts, and the judge sitting in the recording district in question appointed a Board of Medical Examiners, which functioned largely as other boards do today. Then an organic act was passed, which in one place reads:

"That the provisions of this act shall not be so construed as to invalidate or impair any legal claims or rights of persons, etc."

Later the Enabling Act was passed (the act permitting the erection of a State, etc.). It reads, in part as follows:

".....inhabitants may adopt a Constitution.....Provided that nothing contained in the said Constitution shall be construed to limit or impair the rights of persons or property."

Quoting the Constitution of Oklahoma, adopted under the above noted authority granted by Congress:

"Bill of Rights (This is part of a Supreme Court finding as to a certain phase of the Constitution). "It is not depriving one of property without due process of law for a city to regulate by ordinance a business deleterious to public health, morals, safety or welfare of its inhabitants". *Welcher vs First Presbyterian Church*, 76th Oklahoma, 9, 184, p. 106."

### Constitution, Section 39:

".....All physicians, dentists and pharmacists now legally registered and practicing in Oklahoma and Indian Territory shall be eligible to registration in the State of Oklahoma without examination or cost."

In other words the Constitution of Oklahoma validated, up to that time, the acts of various previously existing boards and acts and ordinances affecting physicians. Of course the Legislature was empowered to set up machinery establishing boards and did so, even to enacting laws by which licenses might be revoked, but the grounds were specific and definite.

We are under the impression now, that the status of physicians and lawyers was different, the lawyer was a part of the Court the moment he was licensed. He could be called to the bench in emergency to himself sit as a judge of the Court. The doctor seems to have had no such authority, he has merely a right to practice medicine, after he has complied with certain demands. For the above reason it is "our legal opinion" (worth a great deal, of course) that before we may pass an act affecting physicians as the act passed affecting attorneys, it will be necessary to change the Constitution, no small job I assure you, for on every hand the cult, the isms and the irregulars will be found lined up with the Christian Scientists opposing the act proposed, not for any particular reason, but simply because the medical profession may want it, therefore it cannot be a right act.

### AS A MEANS OF POSSIBLE IMPROVEMENT, WHY NOT?

Speaking of moves to improve the quality of physicians, there is one possibility, which the writer believes would improve the medical profession as a mass, though it is believed it could only be made to apply to those who may hereafter apply for license to practice medicine. The Supreme Court of Texas, on one occasion, held, in substance, that a person once registered was registered for good. This arose out of the kindness of the State Board of Medical Examiners issuing a temporary license to practice, good for a short time only, the physician in question to come before the board and undergo examination at its regular date for that purpose. It is needless to say that that result probably ended "temporary licenses" in Texas,

at any rate the physician refused to come for examination on the contention that if he was qualified to practice a short time he was qualified for all time. Now the point of all this rambling is that men are not qualified *all the time*, some of them hardly at all, but a certain percentage, when they receive their diploma and registration certificate, just quit, they know neither new editions or medicals books, current medical Journals, and clinics are just some sort of an unheard of thing to them. It is the writer's idea that it might be beneficial to the people of Oklahoma as well as to the physicians as a whole to be called upon at intervals of a few years to demonstrate that they have at least kept up with the ordinary improvements and new worth-while discoveries of medicine and surgery. The examination to demonstrate this qualification need, and should not be, technical, but should be very simple, one of such proportions and magnitude as to show that the man in question is averagely well informed and fitted for the neighborhood wherein he resides. Histology, pathology, physiology, and even anatomy might be entirely eliminated from the examination. All that would be necessary would be for the applicant to show that he was acquainted with the basic features of his daily work. He might be given a set of questions, which covered the symptoms, diagnosis and treatment of some of the commoner affections, with which the average physician is daily called upon to care for, and then asked, what the trouble was, what he would propose to do for it, and why. The sole object of this examination, and the law should so state, that it is for the purpose of determining if the physician examined is of average fitness for the community in which he resides, or if he has sufficient medical ability to be permitted to undertake the sacred role of attending physician and advisor to the ill. The board should be required to use ordinary common sense in its endeavors to ascertain the ability and fitness of the man examined. A few simple questions as to most affections will do this. It is important that a physician be able approximately to ascertain early, if he is dealing with malaria or typhoid, though the latter for the time being seems to be almost a thing of the past, whether the case is meningitis or hysteria, measles or scarlet fever, a sprain of the ankle or Pott's fracture, simple pharyngitis, tonsillitis or possibly diphtheria. These are the commoner



things the general practitioner contacts daily, but a certain percentage of us have grown into careless habits, these commoner things may be any one of a myriad of other and rare things, often unamenable to any treatment except a specific treatment, based upon careful, advanced diagnosis, so, unless the physician, after receiving his diploma and certificate from the State Board continues to pay rather regular and fixed attention to problems of medicine as set out in medical journals, monographs, etc., soon he is going to become a dangerous aid to the family, not from anything he may do, but from the things he leaves undone, from his growing, increasing and expanding stock of ignorance. A rehearing every few years, it would seem, might make some of them pay more attention to that most serious and difficult of all professions and callings—the practice of medicine.

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### THE SELECTION OF THE ANESTHETIC

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One of the most important decisions often confronting the attending physician is the selection of the anesthetic to be used. As a rule, in the adult and among the "old-timers", ether is the anesthetic of choice, and it is often used when, due to the patient's peculiar affections, it may be a very perilous anesthetic. Nevertheless, all in all, it is probably the safest "all round" anesthetic in use today, excepting always the use of local anesthetic, novocain, etc., which should have no mortality, and it is certainly nearly never followed by the disagreeable complications seen in the use of ether. Ether may cause, though rarely, immediate death upon the table, or be followed by irritation of the bronchial tubes, amounting to acute bronchitis, bronchial pneumonia, acute collapse of the lung, hepatitis. It is doubtful if it may cause nephritis, there is no proof that it has ever caused nephritis, but formerly it was charged with that complication. Assuming, however, that ether does occasionally cause the complications above noted and that certain types of other anesthetics does not cause them, nor are they followed by the disagreeable complications sometimes following the use of ether, it is well for the surgeon to consider the matter, and, for the protection of his patient use the anesthetic best fitting the case.

The writer believes that blindly adhering to one type of anesthetic for use in any and all cases calling for anesthesia, is due, often, not to regard for the anesthetic used, but rather to the fact that the surgeon has fallen into the habit of using that with which he is most familiar, and to the further fact that he has not mastered the technic necessary to properly use other than ether as an anesthetic. The writer is furthermore very much prejudiced, or in favor of the use of local or spinal anesthetics, rather than any other, and believes from personal experience that most any operation may be performed with ease and safety by their use. I have had no experience with the use of avertin, though it is regarded very highly by those familiar with its use. Boehler of Vienna, who holds probably the largest fracture clinic in the world, has used local anesthetics only in a consecutive series of thousands of cases. There would seem to be vastly less shock in the handling, for instance, of a fracture of the femur by the use of harmless, local novocain, than by any other means. If the case may be completed in an hour or, as a rule in 90 minutes, and is of the lower extremity, certainly spinal anesthesia gives remarkably satisfactory results. The same case may easily be killed by ether, or have a complication leaving permanent and dangerous sequellae. Local anesthesia has one advantage not possessed by any other, and that is the element of time. One may literally take a day operating upon his case, if necessary, and there never need be any hurry about its use, when its effects have died out, simply inject some more. This is beautifully demonstrated in thyroidec-tomy, where the original skin incision is, at times, likely to become revived before the operation is completed. The writer has never seen a fatality, or a near fatality due to the use of either local or spinal anesthesia, but I do recall several instances of postoperative days of coughing, rarely a postoperative pneumonia, occasional collapse of the lung, this followed in two instances by phlebitis.

As a final right to offer an opinion as to the type of anesthesia to be used, the writer recalls that he has been operated upon by everyone of the above types of anesthetics used, and, under no circumstances would he permit the use of ether upon himself. In the order named, and if applicable to the case, anesthetics would be requested by the means of spinal or

local-spinal for the longer and severer cases—local for those of lesser gravity.

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### FIFTIETH ANNIVERSARY OF FIRST REMOVAL OF GALL-BLADDER; SOME IMPROVEMENTS OVER THE PAST

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The writer, a son of a physician, relative of many others of the same profession, recalls with interest the various progressive steps of medical and surgical advances, though, at the time hardly realizing "what it was all about", or the importance of the so-called new operations or endeavor. Among those recalled especially were the opening of the abdomen, in the then "out West," a most serious procedure, and, if successful, the making of the surgeon bold enough to undertake the work. All of these in Indian Territory, up to a certain time were performed in the face of grave emergency, that is, it was certain death if operation was not performed, and almost as certain if it was. A case is recalled where diagnosis of acute appendicitis was made on the first day, operation positively advised, and with equal obduracy refused; finally, when the patient decided he would be operated upon the surgeon refused to operate in the face of obvious wide-spread peritonitis, so the patient remained in bed for more than a month, for days death daily expected, but being Irish and full of resistance, by some freak of nature the enormously distended abdomen, with a respiration rate, due to pressure, unbelievably high, slowly subsided, the man got well without operation, of course, proving the surgeon wrong, and as not knowing what he was talking about. These freaks are occasionally seen by all men with more or less experience. Today we are concerned with the first operation for removal of the gall-bladder. Frankly decided upon in advance, worked out decision to do a cholecystectomy. This operation was performed by Carl Langenbuch\*, then chief of the Lazaruskrankenhaus, Berlin, July 15, 1882. The article does not state the various data, history, etc., simply that he removed a gall-bladder, and that the patient recovered. All over the world, it seems simultaneously men began to do operations which had up to then been considered unusually formidable or positively "taboo." As reports began to circulate from one country to another the aggregate data was digested, the weak spots noted

and eliminated, and soon rules based upon sound reasoning began to be applied to surgical conditions until it would have seemed that the last word had been spoken. However, it seems that there is no "last word", there are constant changes, constant advances and improvements. I recall the day when it was "fashionable" in abdominal surgery to use not less than three to five gallons of sterile or some form of antiseptic solution in the abdomen, to wash out debris, pus, blood, or "what have you?" After a time this gradually gave way to absolutely dry mopings, for the same purpose. Now at times there is a happy medium; occasionally there is a case where solutions are used and justifiably, but they are rare. The good things of yesterday are cast aside or improved upon, the cold glare of scientific reasoning is applied and rationalism rules, or is supposed to rule every manœuvre or procedure. It has been one long day of continuous improvement, however, since the July 15 when Langenbuch removed the gall-bladder, the death rate in many things has almost wholly disappeared, the morbidity rate has kept pace with other improvements, until some fatuously imagine that the "last word has been spoken," that there can be no further advances. A moment's reflection should show us, if we apply the history of past events that probably there will be improvements all along the line. Medicine today is full of baffling, unsatisfactory results from the best and most accepted treatment. Slowly there will be improvements in these until finally that which today appears so baffling and irritating will be a matter of ease, and we will turn to some other problem.

\*Archives of Surgery, July 1932.

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### ASPIRIN (ACETYSALICYLIC ACID) NOT NECESSARILY HARMLESS

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The general public and many physicians have come to regard "aspirin" as a generally harmless remedy. Doctors R. W. Lamson and Roy Thomas, Los Angeles, give a report in the Journal of the American Medical Association, July 9, 1932, which indicates that certain people have an idiosyncrasy, probably due to allergic conditions when this drug is used.

One case, age 53, complained of a cough, paroxysms of dyspnea with wheezing and frequent attacks of bronchitis. In this case, within a few minutes after admini-



stration of a powder containing acetylsalicylic acid the patient died. It developed that formerly a small dose of the drug had brought on severe paroxysms.

The second case, age 62, complained of identical symptoms. Upon the advice of a friend she tried one 5 grain tablet of acetylsalicylic acid; the reaction was immediate and severe.

The third case, age 55, complained of recurrent attacks of itching of the nose and sudden nasal obstruction; frequent attacks of dyspnea with wheezing and a cough. In this case one tablet of acetylsalicylic acid produced a sever attack of dyspnea which required epinephrine for relief.

The fourth case, age 51, had symptoms suggesting a true hay fever, also some wheezing but no acute paroxysms. Occasionally she used acetylsalicylic acid for its analgesic effect. Since 1925 the dyspnea and wheezing had become more severe, and she was not expected to recover from one or two attacks. Hypodermic medication interrupted the attack. The writer concluded that all of these cases were demonstrations of allergy, due to acetylsalicylic acid and that nostrums containing that compound are not "harmless" from the standpoint of the patient with allergic symptoms.

#### WILLIAM WILLIAMS KEEN

A great man, a great citizen, a patriot, a leader among men, and one of the finest characters of American life passed to the beyond when Dr. W. W. Keen, Philadelphia, died in his apartments June 7, in his 96th year. Space does not permit proper eulogy to this great man, Though he retired at 70, more than a quarter of a century ago, he retained to the last a keen and intense interest in all things medical, sociological and to the public good. Perhaps the most remarkable achievement of his career was his operation upon President Grover Cleveland for a malignant condition of the jaw. At the time, had it become known that the life of the President was in peril, the effect upon world trade as well as political situations would have been incalculable, but Dr. Keen evaded all publicity, operated upon a moored yacht in East River, directed his patient to a landing near his home on the Jersey shore, later placed a prosthetic appliance in proper position, and the matter remain-

ed a secret, the President never missing anything of a necessarily vital function, so, a public, which might have precipitated all kinds of trouble remained in ignorance of the matter for more than 20 years. It is significant that one news writer, who acquired the facts in some manner by reason of his privileged position, so far forgot his duty, probably for the money involved, to publish, in Belgium, the story of the operation—the matter was officially denied, in the interest of the public, the writer was properly discredited, though he had told the truth; so far as he was concerned it spelled ruin.

The varied activities of Dr. Keen are too numerous to index in the space we have, but it is sufficient to say that he served in the Civil war as a surgeon, 5th Massachusetts, later acting as Acting Assistant Surgeon, U. S. A., and throughout a busy life the best interests of the medical services of the nation was one of his great interests. Patriotism was deeply instilled in the man, and for that reason he always stood very high among men of advanced thought who had the improvement of the medical services of the country at heart. Anatomy, pathology and surgery were his chief concerns as a medical man. The nation loses a great citizen in his passing.

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#### *Editorial Notes—Personal and General*

DR. K. D. GOSSOM, Custer, is visiting California and other western points.

DR. JOHN F. PARK, McAlester, has returned from a trip visiting European Clinics.

DR. J. HUTCHINGS WHITE, Muskogee, spent the month of June in Washington, D. C.

THE AMERICAN MEDICAL ASSOCIATION will meet in Milwaukee, June 12-16, 1933.

DR. B. H. WATKINS, Hobart, who has been ill from an infected finger, is reported much improved.

DR. JOSEPH W. KELSO, Oklahoma City, and Mrs. Elsie E. Carter, were married, Wednesday, July 20th.

DR. AND MRS. J. T. ANTONY, Lawton, will spend several weeks in Colorado points during this summer.

DR. C. C. RICHARDS, Marlow, while attempting to get his car out of a mud hole, slipped, breaking his arm.

DR. AND MRS. F. G. DORWART, Muskogee, will spend a month in the hills on the Illinois River during September.

DR. J. S. VITTUM, Muskogee, of the U. S. A. Medical Reserve, will spend two weeks in Ft. Sam Houston in July and August.

COLONEL L. S. WILLOUR, McAlester, of the U. S. A. Medical Reserve, will spend two weeks at Ft. Sam Houston in July and August.

DR. AND MRS. CHAS. A. BRAKE and children, Norman, have returned from a vacation spent at various points in Colorado and New Mexico.

ADAIR COUNTY PHYSICIANS entertained visiting physicians with a fish fry, August 3rd, at Watts, after which papers on medical subjects were read.

DR. R. M. HOWARD, Oklahoma City, was elected President of the American Gouter Association, at the last Annual Session held at Toronto. The convention will be held in Switzerland next year.

KAY COUNTY CHARITY CASES will be done proportionately by local doctors over the county, during the coming fiscal year. It is said that a free clinic which heretofore has handled this work will be abandoned.

IN A RECENT ISSUE OF THE JOURNAL it was noted that Dr. L. J. Mooreman was elected President of the National Tuberculosis Association at the Annual Convention in Colorado Springs, in June. This was an error; he was elected Vice-President.

BLAINE COUNTY MEDICAL SOCIETY held its regular quarterly meeting, June 23, in Watonga. The object of the meeting was to increase interest in attendance and increase the output of papers and case reports and generally improve the society. Applications of Doctors Hill and Dresbach, were voted upon.

THE STATE DEPARTMENT OF HEALTH announces that 81,867 children, under 12 years of age, were given toxoid to prevent diphtheria during the year ending April 1st. The department also announces that quinine is being distributed free in large quantities to school children, as well as others in Haskell County. This is done to prevent malarial fever.

THYPHOID FEVER, according to recent reports shows an increase in the United States over the past; 391 new cases being reported in 45 cities and in rural districts; the previous week there were 215 new cases. This disease has become so rare in the last few years, no doubt due to national conditions plus many million preventive vaccines that the doctor had begun to forget it. Now this new increase has brought about a disposition to again "swat the fly." Of course we should swat the fly and not forget the preventive vaccine which is almost a positive preventive of the disease.

SISTER AMY McPHERSON HUTTON, apparently is not getting a square deal. Every time she is abducted into the Mexican desert or strays too far from Malibu Beach somebody tries to swipe Angeles Temple. Recently upon news that her new husband, David Hutton, had lost a damage suit brought against him by a woman who charged that Dave had "done her wrong." Sister Amy toppled over and, according to the press, is supposed to have had a concussion of the brain, that however, did not prevent her from immediately consulting her attorneys. The concussion? must have been severe.

PUBLIC HEALTH IN MEXICO. According to Stuart Chase, who has recently issued "Mexico, A Study of Two Americas," public health and practice of medicine in Mexico, considering the past history of Mexico, is in a remarkable situation. First, it takes some of the conceit out of us to know that the first newspaper published in the western hemisphere was in Mexico, not in the United States; it is well known that the first Medical Journal El Mercurio was published in the City of Mexico, and not in our great medical centers of today, Boston and Philadelphia. Despite all this Chase says, and refers largely to rural communities, "Scientific medical care is non-existent"; the herb woman and the midwife are people of importance in this country. It was amusing to Chase to find, when the Catholic Church was in its day in Mexico, that a little piece of paper plaster was encouraged to be used by thousands of people by their priests as a substitute for medical care. Naturally the death rate as well as the morbidity rate from such disease as typhoid fever, except in the larger cities, was terrific and unbelievable. The death rate per thousand, particularly among infants is scandalously high. Notwithstanding, all in all, Chase is more than fond of the rural Mexican, that type denominated as of Indian descent.

KAY COUNTY MEDICAL SOCIETY, in order to meet its situation with reference to indigent patients, adopted the following resolutions:

#### First Resolution, November, 1931.

"WHEREAS, we, the physicians of Kay County, in common with physicians everywhere, recognize the high aims and exacting duties of our profession to alleviate human suffering, without too much regard to the social or financial status of those affected, we recognize further that the present time finds many of our citizens bearing special burdens because of illness, accompanied by reduced salaries or absolute loss of work, resulting in at least temporary financial dependence. We recognize further that the good health and working capacity of all our citizens must be saved and conserved, and pledge ourselves to this task (service). BELIEVING, however, that the feeling of independence and self respect of these temporarily indigent people should be respected and preserved, we the physicians of Kay County, object to any system of medical service which tends to force (farm them out) any of them to a single physician not of their own choice, or which compels any physician to undertake an indefinite amount of labor for a contract price.

RESOLVED, therefore, that we respectfully urge upon our County Commissioners to adopt some means for the care of our indigent poor which will not violate these principles, and we



further bind ourselves individually and collectively to observe these same principles in our work for the county poor.

#### Second Resolution, July, 1932.

RESOLVED, that the Doctors of Kay County each pledging himself to give of his service as called upon in the discharge of our duty to the indigent of the county, do favor and unanimously agree that we revert to the system previously used in this county, that is, those known indigent are referred by the health supervisor, authorized and established by the commissioners, refer this indigent patient to the doctor of the patient's choice."

#### DOCTOR OLIVER RANCE JETER

Dr. O. R. Jeter, prominent physician of Mangum, died July 2nd, of intra-cranial hemorrhage.

Dr. Jeter was born at Troy, Alabama, June 17, 1882. At the age of four years he moved with his parents to Winnsboro, Texas, where he resided until he came to Greer County 25 years ago. Upon his father's death, when he (Dr. Jeter) was fifteen years, he was obliged to support the family and educate himself. He worked his way through the school of medicine of Baylor University, graduating in 1907.

After his graduation from Baylor University Dr. Jeter came to Greer county, locating at Reed, and later moving to Mangum in 1927.

Dr. Jeter was an expert anesthetist and for many years was on the staff of the Border-McGregor Hospital.

Funeral services consisted of a ritualistic ceremony of the Knights of the Rose Croix, performed by the Oklahoma Consistory, which was followed by a funeral sermon by the pastor of the First Baptist Church, of which Dr Jeter was a member.

His immediate survivors are his widow, Mrs. Kate Jeter and two children.

#### HARD TIMES A MENACE TO GROWING CHILDREN

It is now more important than ever for children to drink lots of milk, according to health authorities. Hard times are making disastrous inroads on the family food-budget. Enforced economy in the expenditure for food is fast becoming a menace to the health and development of growing children. At a time like this milk is very important because it makes up for other food deficiencies. Cocomalt mixed with milk provides a delicious, chocolate flavor food drink—high in nutritive value, low in cost. It points the way to sensible economy. For Cocomalt adds 45% more protein, 48% more mineral salts and 184% more carbohydrate—increasing the caloric value of a glass of milk more than 70%. It contains not less than 30 Steenbock (300 ADMA) units of Vitamin D per ounce. Cocomalt is accepted by

the American Medical Association Committee on Foods. Sample can of Cocomalt sent to physicians on request by R. B. Davis Co., Hoboken, N. J.

#### HYPERTHYROIDISM ASSOCIATED WITH PARKINSONIAN SYNDROME

I. S. Wechsler and Nathan Savitsky, New York (Journal A. M. A., Oct. 31, 1931), note that the association of exophthalmic goiter with paralysis agitans is comparatively rare. Most of the cases reported in the literature show that the association is an accidental one. In the majority of instances the hyperthyroidism preceded the onset of the parkinsonian syndrome. In recent years, attention has been called to the presence of signs and symptoms referable to the vegetative system in acute and in chronic encephalitis, which have a predilection for the basal ganglion-midbrain regions. But even before the involvement of the hypothalamic vegetative centers was recognized as the cause of metabolic and other disturbances, the sympathetic system was believed to be affected in exophthalmic goiter and to bear some relation to it. More recently, the suprarenals, the medulla of which is of the chromaffin sympathetic system, have been shown to stand in definite causal relation to hyperthyroidism. From time to time, suggestions have been made that physiologic or pathologic disturbances in the vegetative centers of the interbrain may have something to do with the production of many syndromes previously regarded as independent disease entities. The question, too, has been raised whether in a syndrome such as hepatolenticular degeneration, the disease of the liver causes the changes in the brain or, conversely, the involvement of the striatum leads to secondary disturbances in the liver. In encephalitis it has long been known that what may be regarded as dysthyroid symptoms were frequently a part of the clinical picture, even though there was no true exophthalmic goiter. The speculation is also justified as to whether the tremor of hyperthyroidism is not in effect the result of secondary changes in the striatum. In view of all this, the question now arises whether exophthalmic goiter may not in some way be the result of some altered physiologic state or pathologic change of the hypothalamic vegetative centers. The proximity of these structures to the regions affected in paralysis agitans and the occurrence of hyperthyroidism with parkinsonism in two cases reported by the authors in which the one syndrome preceded the other may possibly furnish clinical confirmation of theoretical views. In any event the cases, aside from their speculative interest, are worthy of record because of their clinical rarity. Of clinical interest in both the cases was the difficulty in dissociating the hyperthyroid from the parkinsonian tremor. The former is much finer and more rapid, but it overlaid the coarser and slower oscillations of basal ganglion origin. The improvement following thyroidectomy subtracted, as it were, the overtone of tremor and improved the underlying basal ganglion syndrome to some extent. But it may well be that the thyroidal tremor is in reality of basal ganglion origin and caused by toxic changes in those structures. It is interesting, too, that the surgeons hesitated to operate, and it was only after urging by the neurologist and assurance that the paralysis agitans in itself was no contraindication that operation was performed.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
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**The Prolonged use of Salyrgan as a diuretic. Report of two hundred and seventy injections in five years in one case. Joseph R. Wiseman, M.D., Syracuse, N. Y., Journ. A. M. A., July 9th, 1932, Page 114.**

The author reports one case of decompensated hypertensive cardio-vascular disease with marked edema which was given two hundred and seventy injections of salyrgan and novasurol over a period of five years. Excellent diuretic results were received, throughout, and this prolonged treatment appeared to be harmless on the kidneys and other organs. Ammonium chloride, 10 gms. per 24 hours preceded the intramuscular or intravenous administration of this drug, novasurol during the period of this treatment was changed to salyrgan. The spilling of this drug in the tissues results in varying degrees of irritation, and it is painful given intramuscularly. Given intravenously it creates some disturbances in obliterating the veins. This drug contains 33% mercury.

**Gonococcal Arthritis. David Lees, F.R.C.P., Edinburgh, Scotland, British Journal of Venereal Diseases. April, 1932.**

The author after quoting various statistics on the incidence ranging from .05 to 3.22 in his series, or 388 cases of arthritis in 13,000 cases of gonorrhea. It is 4 to 5 times more frequent in males than females. It may complicate gonorrhea at any age but most frequently seen between 20 and 30 years. It occurred as complication of ophthalmia in two cases. In 150 cases of vulvo-vaginitis in children not one case was seen. Among predisposing causes he mentions lack of treatment in the early stages of gonorrhea. Arthritis is rare in anterior urethritis in the male and in urethritis in the female, if these are treated early and intelligently the infection can be kept back from the posterior urethra and the cervix. Too heavy or active exercise during the acute stages. In all gonorrheal cases alcohol intake predisposes to complications metastatic in type.

Arthritis is prone to recur and one attack predisposes to another. In every case there is a primary focus of infection in the body. The infection is metastatic and the organism is carried to the joint by the blood stream. The prostate gland and seminal vesicle are the most common focal points in the male. In this series the author found the posterior urethra involved in 100% of cases, and prostatitis or vesiculitis in 90%. In adult female patients the urethra and cervix are involved in 80% of cases, Bartholin's gland in 40%. Arthritis may set in from 5 days to many years after the initial infection. The author states that 5 days is the earliest case that he has

seen. The arthritis is either mon or poly articular, 15% mon, and 85% polyarticular, large joints are involved more frequently than small ones, order of frequency in his series was knee 64.2%, ankle 36.8%, metatarso-phalangeal 34.7%, shoulder 23.1%, wrist 41.1, metacarpo-phalangeal 13.6%, elbow 4.2%.

The clinical acute cases can be divided into four types. (1) Arthralgia with no gross physical signs of disease. (2) Acute infection of the joint confined to synovial membrane, becomes hyperaemic, considerable fluid in joint, fluctuation can be detected. (3) Acute infections in which in addition to the synovial membrane the cartilaginous surfaces eroded. (4) Acute infection involving the synovial membrane and the articular surfaces with marked hyperaemia of all the vascular structures.

Subacute and chronic cases he subdivides into two types (1) A synovial type involving especially the knee joint. (2) A mixed type involving the synovial membrane and the articular surfaces.

The symptomatology varies with the virulence of the infecting agent, and resistance of the host. Pain, swelling, redness and immobility of joint. Temperature, when suppuration occurs the temperature goes higher, pain more severe, sweating and an ill looking patient. Suppuration he states is rare in small joints. In subacute and chronic cases the swelling is in the form of a hydrops, motion is not so limited here, pain less severe, but this swelling may lead to laxity of the ligaments. The knee joint is most often involved in hydrops. In many of the untreated cases there is often marked limitation of motion due to adhesions set up by serofibrinous exudate, some even simulating ankylosis.

Diagnosis is easy in the acute cases, the clinician must make tactful inquiries regarding urethral discharge. Examination per rectum may reveal some enlargement of the prostate and seminal vesicles. More difficulty is seen in the acute cases following an acute exacerbation of a chronic gonorrhea, or after passage of a sound as for stricture. Subacute and chronic cases of gonococcal arthritis are difficult to diagnose. Any subacute joint condition which is persistent always should prompt us to exclude gonococcal infection, this includes examination for urethral discharge, urinalysis, bacteriological test of secretions, centrifuged deposit of urine, rectal examination of prostate and vesicles with examination of their secretions. Injection of 200 to 400 million dead gonococci to stir up any latent infection, and repetition of the above tests every 24 to 36 hours. The complement fixation test the author states gives a positive reaction in 75% of acute cases, and in subacute and chronic 80%. A negative result does not exclude this from diagnosis.

Treatment he divides into general, to the original focus of infection, to the infected joint and thru the blood stream. He mentions many different methods of local treatment to the dif-



ferent foci of infection, and operative methods as vasostomy, vasotomy and vascetomy with injection of antiseptic materials into the vesicles. That directed to the joint first are palliative for pain. Immobilization and rest, application of sedatives to the joints. Diathermy to the joint, he states, is not a cure, but applied to the joint and to the focus is helpful. Operative methods are mentioned for the joint. Intravenous methods have been tried, and he states that mercuriochrome intravenously has been found by himself to be too toxic.

**Carcinoma of the Prostate: A Clinical and Pathological Study.** J. A. Colston and L. G. Lewis, Baltimore, M'd. Southern Med. Jour., July, 1932.

The author cites 3751 operations on the prostate gland, in 3176 of these pathological study has been made, and he states that there is no evidence in this series that carcinoma develops from benign prostatic hypertrophy. He found carcinoma associated with adenoma (benign) in 57% of these cases. He states that his interpretation here is that carcinoma and adenoma occur simultaneously and independently in the prostate. He mentions the classical progression of carcinoma of the prostate, extension upwards, infiltration of the gland, the seminal vesicles, and slowly the tissues lying beneath the base of the bladder is involved. This growth rarely extends beyond the apex of the prostate, and very rarely penetrates Denonvillier's fascia and into the rectal wall, this because of the lack of lymphatics in this fascial membrane. The rapidity of the growth depends on the type of tumor, the more cellular the tumor the more rapid the extension. He states that suprapubic cystotomy as a routine procedure should be condemned, and to reserve this operation for emergencies only. He classifies from a clinical standpoint cases of malignant disease into (1) Those suitable for radical operation. (2) Cases without urinary obstruction, but too far advanced for radical operation. (3) Cases with varying degrees of urinary obstruction too far advanced for radical operation. A small percent of these cases too extensive for radical operation may be relieved with X-ray and radium therapy. Obstruction can be relieved temporarily by Young's prostatic punch, transurethral electro-instrumentation of various types. He states that if the profession were more alert and suspected all cases with areas of induration in the prostate many more early diagnoses could be made.

In a middleaged female with symptoms of dysuria, frequency, never forget the urethra.

An examination of a male is never completed until an educated finger has been inserted in the rectum and the prostate and seminal vesicles are palpated, and if any suspicion attached in this region massage instituted.

## TUBERCULOSIS

Edited By

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**Summary of a Study of the Types of Tubercle Bacilli Isolated from Human Lesions.** R. M. Price. The American Review of Tuberculosis, March, 1932.

This study began in March, 1926, and being continued at the present time was undertaken

with a view of ascertaining the incidence of the bovine type of tubercle bacillus in human infections and the proportion of bovine to human infection in man. In the beginning of the work an effort was made to limit the study to non-pulmonary forms of tuberculosis; later, however, a number of pulmonary cases were examined. Since it is obvious that many apparently non-pulmonary types are really cases of metastatic focal tuberculosis secondary to a minor pulmonary lesion it was impossible, for the purposes of this study, to depend upon the clinical differentiation of pulmonary and non-pulmonary tuberculosis. The material studied in a majority of the cases investigated, was obtained during life from the wards or the operating room. Detailed clinical histories were taken in all juvenile cases in an effort to trace the source of infection, whether human or bovine.

Of 220 patients in the juvenile group suffering from some form of tuberculosis, 190 proved infected with the human type and 30 with the bovine type of tubercle bacillus. In the majority of instances in which the human type of bacillus was isolated there was a known history of close contact, usually with a relative in the home, with open tuberculosis. Physical examination or X-ray or both showed evidence of tracheobronchial or pulmonary disease, the evidence pointing to the respiratory route of infection. In 30 cases of this series, the youngest an infant of 5 months and the oldest a girl of 12 years, the infection was caused by the bovine type of bacillus. Without exception, the children having this type of infection have come from districts in the Province of Ontario where pasteurization of milk was not carried out, history invariably revealing the fact that the child had been fed on raw milk. It was possible on a number of occasions to demonstrate virulent bacilli in the milk consumed by the child and in the cattle responsible thus bringing forward indubitable evidence of the source of the childhood infection.

It would appear from this study that: (1) Bovine tuberculosis is an almost negligible factor in adult human infection. (2) It is a factor of considerable importance in childhood infection, however, since we find that 13.6 percent of non-pulmonary tuberculosis, leading to disablement, operation and necessitating long expensive treatment, with doubtful results, is caused by the bovine type of bacillus. (3) the disease is milk-borne. (4) Bovine tuberculosis is preventable and can be controlled by effective pasteurization of milk. This is forcibly demonstrated by the fact that in the City of Toronto, where pasteurization of milk is compulsory and has been rigidly enforced since 1915, not a single case of bovine infection has been found in the group of children brought up on the pasteurized milk of the district since that time.

**The Use of the Artificial-Pneumothorax Apparatus During Thoracoplasty.** Cameron Haight. The American Review of Tuberculosis, March, 1932.

The routine use of pneumothorax apparatus during thoracoplasty in cases of closed pneumothorax is suggested. By regulation of the intrapleural pressure during the operation, it is possible to obviate a shift of the mediastinum and consequent respiratory and circulatory embarrassment. Furthermore, on completion of the operation, an optimum collapse of the chest-wall may be at-

tained by decreasing the pneumothorax as desired or by abolishing it entirely.

A case of tuberculous empyema with pneumothorax is reported, in which an increase in the intra pleural pressure during the second-stage thoracoplasty resulted in marked respiratory and circulatory embarrassment. Prompt lowering of the intrapleural pressure by withdrawal of air from the pleural cavity relieved the condition which might otherwise have proved fatal.

**The Use of Metaphen-in-Oil in Pulmonary Cavitation.** M. Jacobs. *The American Review of Tuberculosis*, March, 1932.

Collapse therapy and thoracoplasty constitute the only rational treatment in the management of pulmonary cavitation. In the far-advanced and inoperable cases, external drainage should be encouraged. This can be accomplished by intrapulmonary medication with different drugs dissolved in oil, which should be followed by postural drainage. With this method, the expectation is mechanically facilitated and reduced, the cough is diminished and the temperature, pulse and respiration are greatly improved. The author reports five cases bearing out his experience that metaphen-in-oil, 1:5000 solution, has proved to be the best available agent. It has antiseptic properties and is non-toxic and non-irritating. He describes his cases and their treatment in detail.

**Tuberculous Infection in Mental Defectives.** A. N. Bronfenbrenner. *The American Review of Tuberculosis*, March, 1932.

The high mortality of pulmonary tuberculosis in state institutions for the feeble minded leads one to expect a high prevalence of tuberculous infection among mental defectives. The sanitary standards of these institutions and the hygienic routine instilled into the inmates, however, do not corroborate such an expectation. These observations led to a tuberculin test of the entire population of Letchworth Village (State School for the Feeble-minded, Thiells, New York) in an effort to determine some actual facts in regard to the prevalence of tuberculous infection among the feeble minded.

There were 946 (40.5 percent) reactors among the 2334 persons tested. The proportion of reactors among the children attending the grade school of the institution, 34.7 percent, compared with what has been found in public school children in various communities indicated that the prevalence of tuberculous infection in the institution tends to be lower than in the city communities from which the institution draws its patients. The advantages of institutional surroundings over city environment were illustrated by the observation that the proportion of reactors among recently admitted school-children is higher than among the pupils who have resided in the institution for some length of time. Analysis of the results of the tuberculin testing showed that the prevalence of infection is kept under good control in all parts of the institution except the infirmaries. The proportion of reactors was found highest, 50 to 60 percent (irrespective of the ages of the individuals), among the infirm patients. This appears to be due to the combined effect of their mental and physical deficiencies and might contribute greatly to the high mortality rate among the feeble minded. Another observation which

apparently has a bearing on this is that the proportion of reactors tends to be higher in the lower grades of the feeble minded. This was true in the entire population of the institution as well as in groups of defectives apart from the infirm patients, so that it appears that mental defect in itself is a factor favoring the spread of tuberculous infection.

**Abnormal Mental States in Tuberculosis.** Alexius M. Forster and Charles E. Shepard. *The American Review of Tuberculosis*, March, 1932.

A study was made of the abnormal mental states found in 100 unselected cases of pulmonary tuberculosis in Cragnor Sanatorium in an attempt to learn whether such abnormal mental states are specific to the disease or are dependent upon the personality makeup of the individual. Personality makeup was determined by a complete physical and psychological life history of each individual. Tuberculosis has been considered as an emotional crisis in the life of the individual toward which he may react either normally or abnormally, depending upon his personality makeup before the onset of the disease. Sixty-one per cent of the group studied were considered to show a normal behavior under treatment, or they showed a simple emotional maladjustment which was rectified during the period of observation. Of the remaining 31 patients, 7 showed a persistent simple maladjustment, 20 were diagnosed as definitely neurotic and 4 were diagnosed as psychotic. Of the neurotic group, 9 cases of fatigue neurosis (neurasthenia), 10 cases of anxiety neurosis, and 1 case of conversion hysteria were seen. Fatigue neurosis was found more frequently in women than in men and more frequently in the asthenic than in the athletic individual. Anxiety neurosis was more common in men than in women and was found quite frequently in Jewish patients. No abnormal mental state specific to tuberculosis was discovered. No correlation was found between abnormal mental states and the extent of disease, severity of toxæmia, conditions of age, sex or body type. A definite correlation was found to exist between these abnormal mental states and the personality makeup of the individual, thus the emotional reaction to tuberculosis may be roughly predicted from a study of the personality make up of the affected individual. While abnormal mental states are observed commonly in tuberculosis they are probably no more common than in other conditions which produce similar emotional crises and in which the restrictions imposed by that crisis call for so much emotional adjustment. It is to be concluded that an individual will react to tuberculosis either normally or abnormally according to his emotional stability or instability as determined by his personality makeup before the onset of the disease. Normal adjustment may be expected in the patient with an emotionally stable personality while abnormal mental states must be expected in those patients who are already emotionally unstable before the onset of tuberculosis.



## NEUROLOGY AND ENDOCRINOLOGY

Abstracts, Reviews and Comments Edited by  
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**The Effect of Liver Therapy on the Neurologic Manifestations of Pernicious Anemia.** Baker, Benjamin M., Jr., Bordley, James III, and Longcope, Warfield, T. *Am. J. Med. Sciences*, 184:1, July, 1932.

Many conflicting reports have been presented regarding the value of liver therapy upon the nervous symptoms of pernicious anemia. In this article the authors have extensively reviewed the literature and present their results in the treatment of forty-four cases of pernicious anemia, thirty-five of which showed definite signs and symptoms of subacute combined degeneration. They illustrate the course of the disease under treatment with five case reports.

They call attention to the certain similarities in the effects produced upon the symptoms referable to changes in the nervous system by liver therapy. The signs and symptoms most noticeably benefited are those having to do with a disturbance of sensation or of motor paresis. Muscular weakness, numbness and tingling, even profound alterations of cutaneous or osseous sensibility, ataxia, girdle sensations and sphincter disturbances may improve remarkably or disappear entirely. Whereas, although the Babinski sign may disappear, the exaggerated reflexes and spasticity are less likely to diminish, and though the spastic paresis may be greatly improved in some instances this is rare. They observed that large quantities of liver are required to bring about the maximum therapeutic effect, and warn us that a rise in the erythrocytes is not commensurate with improvement in nervous symptoms. Although the red blood count may return to normal, the nervous symptoms may persist or actually progress. They particularly stress the time factor, and state that during the entire latent period liver should be given in large amounts and with total disregard to a high red blood cell count. The presence of comparatively mild infections in pernicious anemic patients greatly retards the response to liver therapy and may prohibit it entirely.

They seem to agree with Henneberg that the characteristic lesion in the spinal cord in pernicious anemia is not a sclerosis but a focal degeneration of the myelin sheaths, which, as the process increases, spreads upward in the posterior column and down in the pyramidal tracts. The lesion is different from that in tabes, in that the posterior roots are not involved. There is considerable evidence that the lesions are not confined to the spinal cord, but that all parts of the nervous system may be affected, including the peripheral nerves, cord and brain. This clarifies many of the symptoms and signs, such as peripheral neuritis, glossitis and papillary atrophy, so commonly found. Psychoses, usually manifested by depression, and ideas of persecution are not uncommon, and these in some instances may be directly connected with anatomic changes in the brain.

Many authors are in accord with the view that the origin of the changes in the nervous system

in pernicious anemia are dependent, as they are in beriberi and sprue, upon a vitamin deficiency. It is known that a deficiency of vitamin B is the immediate cause of beriberi and probably of pellagra, and that the lack of the anti-neuritic principle of vitamin B in the diet will result in extensive multiple degeneration of the peripheral nerves, spinal cord and brain. It may be that in some way this deficiency might be accountable for the alterations in the nervous system in pernicious anemia.

They report improvement in the nervous signs and symptoms in 58.93 per cent in eight patients with advanced subacute combined degeneration who were treated for more than ten months, and in 55.17 per cent of the signs and symptoms in cases treated for more than six months. The symptoms and signs that improved most noticeably were those referable to disturbances of cutaneous and muscular sensibility, and to flaccid pareses.

They state in conclusion that, even though there still remains a group of cases in which the extent and situation of the degenerative lesions in the spinal cord excludes the possibility of repair through therapeutic procedures, it seems unreasonable on this account to neglect those cases which may be vastly improved by intensive liver therapy.

**Neuro-Anemic Syndrome.** Baker, Lewellys F., So. *Med. Jour.* 25:687, July, 1932.

Barker reports a case of the Addison-Biermer type of anemia with neurological symptoms treated by parenteral administration of liver extract, and discusses some of the recent improvements in the treatment of this type of anemia.

He cites Gansslen of Tübingen, who has used intramuscular injections of a special extract of liver, and the results obtained in Johns Hopkins Hospital with a similar extract. Gansslen, on giving only 2 cm. daily (equal to only 5 grams of liver) by his method was able to stimulate the development of reticulocytosis and the restoration of the blood as rapidly as when given fifty times the quantity by the oral route. He also quotes Gansslen in that cases of pernicious anemia that were recalcitrant to oral administration of liver and liver extract have responded quite well to treatment by his new extract administered by the parenteral route, and that these intramuscular injections have been particularly efficacious in causing great improvement in the neurological signs and symptoms.

He refers to Victor Schilling, of Berlin, who states that the intramuscular injection of this substance is followed by an increase of strength, an improvement of the general appearance, a heightening of the capacity for work and an elevation of the general mood. These changes were especially noticeable in those patients who continued to have residual symptoms, such as paresthesias, emotional depression, anorexia, emaciation and pallor, despite a daily intake of 250 grams of natural liver.

He mentions the work of Isaacs, Sturgis and their associates at the University of Michigan, who have produced a liver extract said to be thirty times as efficacious as other extracts and suitable for intravenous administration. From four to six injections of this new extract bring the blood in pernicious anemia back to normal and

thereafter injections once a month continue to maintain normal counts.

In closing he warns, pending better knowledge, against intravenous injections of liver extract, except in cases that are refractive to large doses of liver and liver extract given by mouth.

**The Problem of Hysteria.** Prof A. Hoche, Psych. Univ. Clinic, Freiburg. (*Deutsche Medizinische Wochenschrift*, No. 1, 1932). Abst. *Ars. Medici*, 10:254, June, 1932.

The speaker in his lecture opposed the view of the majority of modern physicians that hysteria has been "unmasked" as a purely psychic process produced by some kind of speculation with regard to some "object of desire." It is true that today we see far fewer cases of hysteria outside our activities as expert opinion; this fact may however, be connected with the circumstance that nowadays there are not many people who are in some kind of insurance. Most of the symptoms of hysteria, which often point directly to organic fundamental causes, cannot be explained by "motive" alone. The tendency to muscular tiredness, to tachycardia, extrasystoles, to seasickness, formication of the limbs, the sensitiveness of the skin to insolation or bites of insects, the intolerance of alcohol or tobacco, the idiosyncrasy to a number of medicaments, nervous dyspepsia, etc.—all these symptoms are indicative of a different make-up not of the mind but of the nervous system. It is even more difficult to explain hysterical analgesia and paralysis by psychic changes. The "motive" therapy simply pronounces the patient to be analgetic because he wants to appear ill. Why then cannot a person suffering from trigeminal neuralgia abolish his maddening pain by a lively determination to do so? Why did not the victims of medieval tortures tread this path to analgesia that is said to be so easy? We must confess that we cannot explain why an irritation that excites pain of whatever degree fails in some persons at certain times to penetrate to their consciousness although their conduction is unimpaired. With hysterical paralysis, the inference that the patient does not want to move seems obvious; but even there we are groping in the dark. The motor cerebral cortex gives the impulse for the action of the muscles of the body, but we do not know along what path the will to move reaches the motor cerebral cortex. Patients suffering from katatonia report, in times of remission, that they had not been able to carry out movements without being prevented by definite intentions, feelings or ideas.

From the practical point of view, the matter lies as follows: there are individuals who at certain times and in certain circumstances show genuine hysterical symptoms the nature of which we cannot explain. The motive theory throws as little light on the subject as any other. We must be satisfied simply to state and recognize the fact. Persons in whom such symptoms are observed do not differ from others in their outward appearance, but there must, nevertheless, be active in their central mechanism some unknown peculiarity of which it is a question whether it is innate or whether it is acquired under the influence of special factors. The speaker described this peculiarity as "hysterical capacity," a term which is now generally accepted. This hysterical capacity may apparently be present during a person's whole life without ever becoming manifest; among the many factors which arouse it belong

injuries due to accident, but it is certain that not all the functional nervous consequences or accidents are of a hysterical nature. Neither will all of the persons who are capable of hysteria react to an accident with hysterical symptoms; something must also occur in addition and this is the decisive point; what is characteristic of the subject of hysteria is that he turns his hysterical capacity to account. In cases of this kind, the idea of a "motive," which is of course based on vast practical experience is, to a certain extent justified. A good many victims of accidents who possess a congenital or acquired hysterical capacity exploit this capacity more or capacity not only serves the desire for compensation; it may arise from the wish to satisfy an injured sense of right; it may have its source in the dread of disease (hypochondriacal hysteria) etc. So far the nature of hysteria remains, as it always has been, obscure.

**Amyotrophic Lateral Sclerosis (A Clinical and Pathologic Contribution).** P. Ottonello Rassegna di studi psichiat. 18:221 (May, 1929). Abst. *Arch. Neuro. and Psychiat.* 27:1482, June, 1932.

The author reports in detail eleven cases of amyotrophic lateral sclerosis from the clinical standpoint and five from both the clinical and the pathologic standpoints. He pays particular attention to the etiology and pathogenesis of the clinical manifestations. He is opposed to any narrow limitations or distinction of amyotrophic lateral sclerosis from other bulbospinal spastic and trophic clinical syndromes, as transitory stages are frequently found that point to a strict relationship between lesions of the cells of the anterior horn and of the medullary pathways. Among the various conclusions that the author reaches, the following are worthy of consideration: (1) The lesion of the pyramidal tract as well as of the cells of the anterior horn has the definite characters of a primary process. (2) The perivascular infiltrations that are occasionally found are so slight as to be considered secondary to the process of disintegration.

A study of the lesions that are found in the cells of the anterior horn and in the medullary pathway leads to the consideration that amyotrophic lateral sclerosis is a pathologic condition, the pathologic substratum of which consists fundamentally of the association of lesions involving the two neurons of voluntary motility. Such facts, however, do not authorize a separation from the pathologic standpoint between amyotrophic lateral sclerosis and other pathologic conditions in which the lesions are predominantly or exclusively circumscribed in one of the two systems, not only because of the close analogies of the elementary lesions in these various diseases, but because of the frequency with which one observes histologic pictures of transition between the various pathologic conditions mentioned. The author believes in the systemic nature of amyotrophic lateral sclerosis, and considers the lesion of the central and peripheral neurons as being independent of each other; therefore, he does not subscribe to the opinion of Bertrand and Bogart of an early involvement of the synapses between the two neurons.

On the question of pathogenesis, the author develops extensively his own conception of the vulnerability of the various structures of the spinal cord on the basis of a difference in chemical structure. The predisposing and determining



factors of the disease are also studied from a biochemical standpoint. From the etiologic standpoint, the author emphasizes the importance of toxic and infectious diseases, among which syphilis seems to play an important role.

### SURGERY OF SUPPURATION IN FASCIAL SPACES OF THIGH

J. E. Milgram, Iowa City (Journal A. M. A., Jan. 9, 1932), calls attention to the fact that if one reads the textbooks of today and studies, for example, serial cross-sections of the thigh, one obtains the impression that the thigh is a compact structure of muscles and bones, encased in fascia, subcutaneous tissue and skin. Between the muscles run irregular septums or prolongations of fascia. This orthodox description is not correct. The thigh contains large and very important fascial spaces extending its full length traversed only by fine areolar bridges. A revision of one's understanding and treatment of thigh infections is necessary in the light of this concept. Just as the spatial anatomy of the hand is a comparatively new surgical acquisition, so is a painstaking study of the fascial spaces of the lower extremity a recent accomplishment. During the past five years the author has examined the fascial spaces of the lower extremity in approximately 200 cadavers. During this period he has tried to apply his anatomic concepts to a clearer understanding of the reasons for and paths of suppurative extension in the lower extremity. He lists the salient and anatomic features of the situation thus: 1. There are two large compartments in the thigh—an anterior and a posterior. They communicate over the greater trochanter under the vaginal fascia. 2. The important structures immediately beneath the floor of the anterior compartment are the anterior femoral nerve and the great artery and vein. 3. The structure of most interest in the floor of the posterior compartment is the great sciatic nerve. 4. Several bursae have easy access to the compartment, in particular the large, deep trochanteric bursa, which lies between the vaginal fascia above and the greater trochanter below. 5. The popliteal space belongs in a special sense to the leg and not to the thigh. These large compartments are obviously "dead spaces" into which adjacent pathologic processes accompanied by suppuration can discharge purulent material. Once in these spaces, such pus may travel a very long way into communicating spaces. Efficient treatment requires: (1) Accurate preoperative localization of the primary focus, if possible. The common sources of error lie in the failure to think of pathologic changes in the bursa or to seek silent lesions in the ilium, sacrum, sacroiliac joint, spine and retroperitoneal structures. In infections of the bursa and the posterior compartment, hip joint disease may be simulated. However, opening of the joint may result disastrously, as the joint also thereupon becomes involved. (2) Efficient drainage of the primary focus—bone, bursa, or gland, wherever possible. Since compartments are unavoidably traversed, incisions should be left wide open and should be as direct as possible. Drainage through split muscle incisions is an undesirable procedure. (3) Efficient drainage of compartments where involved. (4) Rest. For the past five years, the author has applied the principles and details of

the Orr method to the treatment of these soft tissue infections. Petrolatum packs, casts without windows, change being made at intervals of from six to eight weeks constitute the usual regimen. Secretions are quite profuse from large mesothelial surfaces, necessitating careful protection of the skin with petrolatum, and occasionally weekly changes of the outside (only) layers of the dressing. The results have been pleasing.

### THE CHANGING DIET OF AMERICAN PEOPLE

In an examination of a few characteristic menus of the past, Lafayette B. Mendel, New Haven, Conn. (Journal A. M. A., July 9, 1932), was impressed by the great abundance of flesh foods in the dietary. This is true regardless of the time of day when the meals were served. The supply of muscle meats was evidently more readily maintained throughout most seasons of the year than was that of fresh fruits and vegetables. With the passing of the years there has been a gradual displacement of meats from their former dominance in the regimen. The modern statistics of the food industries indicate an increased consumption of dairy products, vegetables and sugar. The story of sugar is particularly interesting. During the early part of the last century, sugar was used primarily as a condiment. The consumption in 1823, for example, has been estimated as enough to give each person 8.8 pounds a year. This represents about 44 calories a day. Last year, somewhat more than a century later, the annual per capita consumption of sugar amounted to 108 pounds, or more than 500 calories a day. This means that sugar has become an important food, representing, on the average, nearly one sixth of our energy intake. Incidentally, this has been accomplished with a tremendous reduction in the cost of the product; 1,000 calories are being sold at a retail of less than 3 cents. Obviously, this change in food habits in the case of sugar has resulted in the displacement of other foods from the national diet. The tendency toward the displacement of meat dishes, with their higher protein content, is indicated in the recent experience of American restaurants that have adopted the new fixed-price plan with the slogan of "all-you-can-eat." There are more objective indications of changes in food preferences of Americans in the direction of lessened protein intake, such as a decrease in meat consumption would bring about. In the course of a long experience as a teacher of metabolism the author has gathered the reports of hundreds of analyses of twenty-four hour urines of young men and women. In health the nitrogen content of the kidney output furnishes a reliable index of the nitrogenous (or protein) intake. During the nineties of the last century the estimated protein intake, after due allowance for fecal losses of nitrogen, generally approximated an average of at least 100 Gm. (16 Gm. N times 6.25) a day. In the course of the years, these annually secured estimates are showing lower averages. It is possible today to secure fresh meats, fresh eggs and fresh milk in every urban center without interruption; citrus fruits and some sorts of fresh vegetables are available throughout the entire year, even in the smallest hamlet. The opportunity of selection has thus become greatly enhanced. To these important changing factors must be added the results of research in the physiology of nutrition and the extension of popular education regarding food and diet.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE.

Examination held at State Capitol, Oklahoma City, June 8th and 9th, 1932. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Lattimore, F. Cornwell	1908	Shelby, N. C.	Univ. of Okla.	1932	Okla. City.
Newlin, William Henry	1904	Oney, Okla.	Univ. of Okla.	1932	Maramac, Okla.
Dally, Raymond E.	1903	Georgetown, Ky.	Univ. of Okla.	1932	Okla. City.
Gullatt, Ennis M.	1906	Hanna, Okla.	Univ. of Okla.	1932	Okla. City.
Grosshart, Paul Lawrence	1902	Missouri	Univ. of Tenn.	1931	Tulsa, Okla.
Jones, William Ansel	1903	Kirksville, Ky.	College of Med. Evangelist, Los Angeles	1932	Tulsa, Okla.
Ware, Stephen Charles	1906	Iowa City	Univ. of Iowa	1930	Okla. City.
Barry, George Newton	1900	Missouri	Washington Univ.	1930	Picher, Okla.
Boon, Clifton Udonna	1910	Amarillo, Tex.	Univ. of Okla.	1932	Chickasha, Okla.
Smith, Richard W. D.	1904	Lorimor, Iowa	Univ. of Okla.	1932	Okla. City.
Hubbard, Ralph Waldo	1908	St. Joseph, Mo.	Univ. of Okla.	1932	Okla. City.
Ragan, Tillman A.	1904	Vichy, Mo.	Univ. of Okla.	1932	Okla. City.
Smith, Addison B.	—	Butler, Texas	Univ. of Okla.	1932	Okla. City.
Allen, George Thomas	1908	Eddy, Texas	Univ. of Okla.	1932	Okla. City.
Brown, Isidore Ira	1907	Phil. Pa.	Univ. of Okla.	1932	Okla. City.
Cordonnier, Byron J.	1906	Avilla, Mo.	Univ. of Okla.	1932	Bethany, Okla.
Batheld, Floyd T.	1900	Bennett, Iowa.	Northwestern	1932	McAlester, Okla.
Cox, Arlo Kenneth	1906	Lenora, Okla.	Univ. of Okla.	1932	Taloga, Okla.
Gibbs, Allen Gilbert	—	Wilkinson, Miss.	Univ. of Okla.	1932	Okla. City.
Felts, George Randle	1907	Elk City, Okla.	Univ. of Okla.	1932	Okla. City.
Leonard, Charles Edwards	1907	St. Louis, Mo.	Univ. of Okla.	1932	Okla. City.
McCollum, Estel B.	1903	Statesbury, Mo.	Univ. of Okla.	1932	Waynoka, Okla.
Smith, Raymond Orval	1903	Owasso, Okla.	Univ. of Okla.	1932	Okla. City.
Rieger, Joseph Anton	1894	Lexington, Okla.	Univ. of Okla.	1932	Norman, Okla.
Connell, Matt A.	1906	St. Louis, Mo.	Univ. of Okla.	1932	Picher, Okla.
Carter, Claud E.	1902	Francis, Okla.	Univ. of Okla.	1932	Ada, Okla.
Henry, Millard LaFayette	1908	Little Rock, Ark.	Univ. of Ark.	1932	Wilburton, Okla.
Roth, Herman W.	—	Iowa	Univ. of Okla.	1932	Tyrone, Okla.
Wilkerson, John Milton	1906	Spencer, Okla.	Univ. of Okla.	1932	Okla. City.
Marx, Ralph Leon	1908	Pawnee, Okla.	Univ. of Okla.	1932	Okla. City.
Rutherford, Vester M.	1907	Illinois	Univ. of Okla.	1932	Moreland, Okla.
Humphrey, J. Hugh	1902	Bramon, Okla.	Univ. of Okla.	1932	Okla. City.
Irvine, George Samuel	1907	Wichita, Kan.	Univ. of Okla.	1932	Prague, Okla.
Roberts, David Allen	1903	Morganfield, Ky.	Univ. of Okla.	1932	Enid, Okla.
Walker, Russell Holland	1907	North Carolina	Univ. of Okla.	1932	Okla. City.
Long, Leonard	1907	Prague, Okla.	Univ. of Okla.	1932	Okla. City.
White, Arthur Eugene	1906	Sayre, Okla.	Univ. of Okla.	1932	Okla. City.
Lewis, Russell W.	1906	Drummond, Okla.	Univ. of Okla.	1932	Walters, Okla.
Fahring, Shirley Anthony	1907	Union, Okla.	Univ. of Okla.	1932	Okla. City.
Haddock, James L., Jr.	—	Whitecastle, La.	Univ. of Okla.	1932	Norman, Okla.
Gentry, Raymond Carl	1907	Wayne, Okla.	Univ. of Okla.	1932	Pawhuska, Okla.
Lang, Silas Archie	1903	Newport, Ohio	Univ. of Okla.	1932	Tulsa, Okla.
Keen, Frank M.	1903	Elk City, Okla.	Univ. of Okla.	1932	Shawnee, Okla.
Pierson, Dwight D.	1905	Woodward, Okla.	Univ. of Okla.	1932	Okla. City.
Gilliland, James Orth	1908	Mangum, Okla.	Univ. of Okla.	1932	Mangum, Okla.
Danielson, Arthur David	1905	Kansas	Univ. of Okla.	1932	Clyde, Kans.
Duer, Joe L.	1905	Oklahoma	Univ. of Okla.	1932	Taloga, Okla.
Obermiller, Ralph G.	1905	Missouri	Univ. of Okla.	1932	Tulsa, Okla.
Monfort, John Joel	1907	Alva, Okla.	Univ. of Okla.	1932	Alva, Okla.
Chivers, Edgar Eymon	1875	Buffalo, N. Y.	Rush Med.	1899	Mannsville, Okla.
Riley, Warren Sumner	1903	ElDorado, Ark.	Univ. of Ark.	1930	Holdenville, Okla.
Rusten, Elmer M.	1902	Pigeon Falls, Wis.	Univ. of Minn.	1929	Okla. City.
Strahan, Eva Eugenia	1903	Poplarville, Miss.	Tulane Univ.	1928	Stillwater, Okla.
Scott, Philip Albright	1896	Emmelsburg, Ia.	Rush Med.	1923	Tulsa, Okla.

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### TRACHEOTOMY—ITS INDICATIONS AND MANAGEMENT\*

L. C. McHENRY, M.D.  
OKLAHOMA CITY

The classification of tracheotomy as high, medium and low is obsolete. With two exceptions, the low tracheotomy is the only one justified in modern practice. In life-saving emergencies a stab through the cricothyroid membrane or any similar procedure is of course justified. The second exception is the preliminary tracheotomy before a laryngectomy where we wish to preserve all of the trachea possible for later use in attaching it to the skin.

The cases in which tracheotomy is indicated may be classified in four groups. The first group, by far the most common, contains those cases with an obstruction of the larynx. This may be due to paralysis, inflammations, infiltrations, impacted foreign bodies and pressure from outside the airway.

A second group of cases are those in which we wish to perform extensive operations about the neck and head. We call this the group in which a tracheotomy is expedient, that is, it enables us to prevent foreign material from getting into the air passages and allows for free breathing and better anesthetic control.

The third group consists of those small children and infants who have movable foreign bodies in the trachea. Myerson has stated that he uses a tracheotomy in all cases with round or ovoid movable foreign body in the trachea. He justifies this procedure as follows. A foreign body moving up and down in the trachea soon causes considerable inflammation in the spongy subglottic tissues. With this area already inflamed, the trauma incident to tracheoscopy or bronchoscopy coupled with the manipulation often necessary in obtaining a grasp upon and removing such

large foreign bodies is more liable than not to cause an increase of swelling which necessitates a tracheotomy anyway. His second reason is that such foreign bodies are much more easily removed through an opening in the trachea, in fact the foreign body will often be coughed out spontaneously when the trachea is held open.

The fourth group in which tracheotomy is indicated are those infants who have a severe tracheobronchitis with profuse secretions such as we see in vegetable foreign body cases. Here the proper management of the tracheotomy is an essential accompaniment of the initial operation. These will be discussed more completely later on.

While we are discussing indications it is well to mention instances where it is not advisable to perform tracheotomies though we are sometimes urged to do so. These are in patients who are seriously ill with some condition which incidentally causes a partial or an apparent obstruction of the larynx. Recently a consultation as to the advisability of tracheotomy was requested on a patient in the University Hospital. This was a woman about sixty years of age who weighed about 250 pounds. There was an inspiratory stridor, with indrawing at the supraclavicular region, the xiphoid and the intercostal spaces, obviously a severe respiratory distress. On questioning the interne and examining the chart it was found that she had been a severe diabetic for several years, had high blood pressure, had recurrent signs of cardiac decompensation and had just entered the hospital that day with an acute sore throat. There was pale bluish edema of the pillars and soft palate and extensive ulceration over both tonsils with a dirty gray membrane. The blood count gave a typical picture of agranulocytic angina. Indirect laryngeal examination revealed that the edema in the throat had not involved the larynx. Obviously the respiratory distress was due to the extremely toxic condition and not to laryngeal obstruction.

In local inflammations about the mouth

\*Read at Annual Session, Oklahoma State Medical Association, Tulsa, May 26, 1932.

and throat where there is definite encroachment upon the airway it is sometimes not advisable to perform tracheotomy because this would open up the deep tissue planes of the neck as avenues for infection. In such cases, a Ludwig's angina for instance, Myerson advocates intubation with a large silk woven catheter. The proximal end of this may be fastened to the skin of the face and it is sufficient to maintain an airway until the surgeon can drain the pus and let the edema subside. An esophageal feeding tube is also of very great value.

It is well to remember that in many severe dyspneas where the accessory muscles of respiration are called into action there may be retraction of the intercostal spaces, the suprasternal notch and the xiphoid without any mechanical obstruction of the upper airway.

The previously mentioned fourth group, where tracheotomy is indicated, is typified by those infants who have had a foreign body in the trachea or large bronchi and have developed a tracheobronchitis with profuse secretions. These usually have in addition, edema of the glottis and subglottis following removal of the foreign body by bronchoscopy. Here placing of a cannula in the trachea is only the beginning of the treatment. The two following cases illustrate the importance of proper management.

Case 1. A white female child, aged 8 months. One week before admission she had aspirated a watermelon seed. She had had restlessness, wheezing respiration and frequent attacks of coughing accompanied by cyanosis with all symptoms worse the two days before admission. The watermelon seed was rather easily removed from the trachea after a great deal of mucus had been aspirated through the bronchoscope. No anesthesia was used. She was returned to bed, placed in a croup tent and given steam inhalations with compound tincture of benzoin 20 minutes of every hour. The dyspnea and distress were greatly relieved for about six hours but then became gradually worse with signs of moisture in the chest which she did not seem to be able to expel by coughing. Atropine was given hypodermically without relief. As the dyspnea gradually became more marked she developed inspiratory indrawing at the neck and epigastrium. Tracheotomy was performed eight hours after removal of the foreign body. When the trachea was opened a bronchoscopic aspirating tube was passed into the trachea and main bronchi and a large amount of mucus removed. A No. 1. Jackson cannula was placed in the trachea. The steam inhalations were continued and a small tonsil suction pump was placed at the bedside with a catheter attached which was small enough to pass easily through the tracheotomy tube without completely blocking it. The nurse was shown how and instructed to pass this into the tube whenever she could hear mucus in the trachea and to clean the inner tube as of-

ten as necessary. Aspiration was done every fifteen to thirty minutes during the first night. In spite of this, the next morning the tube was almost plugged with dried mucus and the baby was taken to the operating room where the tube was removed and the trachea and main bronchi aspirated with a bronchoscopic suction tube. This procedure had to be repeated twice that day, twice on the second and third days and once on the fourth day and fifth days. The temperature rose to 105 on the first day after tracheotomy and then gradually fell, reaching normal on the fifth day. A half cork was placed in the tube on the sixth day and a full cork on the seventh day. The tube was removed on the eighth day. Recovery thereafter was uneventful.

Case 2. A white male baby of 10 months, brought to the hospital with a history of having a severe strangling and choking attack three days previously while playing on the floor with a small tin spoon. The mother found the handle of the spoon on the floor after the attack. He had no treatment except castor oil and they brought an X-ray to the hospital with them showing an irregular shaped metallic foreign body in the region of the right main bronchus. At bronchoscopy, done without anesthesia, this was found in the right bronchus with a ragged upper border at the level of the carina. There was considerable difficulty in getting the foreign body through the larynx and probably some laceration of the subglottic tissues by the sharp corners of the upper edge of the tin where it had broken from the handle. For twelve hours following operation there was no respiratory difficulty except spells of coughing with wheezing during the attacks. Then there was a rise of temperature and rate of respiration with gradual development of restlessness, inspiratory difficulty and signs of moisture in the chest. Tracheotomy was performed about sixteen hours following bronchoscopy. The same apparatus for keeping the tube clean was used as in the other case. The next day the temperature rose to 105 and there were signs simulating pneumonia over the right middle lobe. The white count at this time was 15,600 and 62% neutrophils. He was taken to the operating room three times on this date and secretions aspirated from the right bronchus. On the next day the signs over the middle lobe had cleared and by the third day the temperature had dropped to 101. Except for a rise to 103 on the sixth day, when the tube became plugged during the night, the temperature then gradually came down to normal. The procedure of aspirating the trachea and bronchus was carried out twice daily for three days and once daily thereafter. The tube was corked on the eighth and removed on the ninth day following tracheotomy.

While we all know that tracheotomy ordinarily requires no such elaborate after care, these two cases would certainly have died had we not taken pains to keep the plumbung open after we had installed the pipes.

Under the term "management" of tracheotomy cases the following measures are those which have been found most useful.

1. Frequent removal and cleansing of the tracheal cannula. Simple cleansing of



the inner cannula will not suffice in cases with profuse secretions, as even the outer cannula becomes closed with dried mucus. This must be done as often as the tube becomes obstructed and cannot be done readily if the skin incision is closed with sutures. The other reason for not suturing these wounds is that they are all infected and suturing prevents proper drainage.

2. A mechanical suction pump should be at the bedside constantly. Equipped with a small catheter which may be introduced into the trachea without trauma, it is invaluable. The pump is of no use unless someone is there to use it, hence a good nurse is also invaluable. If we are not able to keep the trachea and bronchi clear of secretions by suction through the tracheal cannula it is necessary to remove the cannula and pass a bronchoscopic suction tube into the main bronchi. If this is not sufficient the bronchoscope may be passed in the same manner and the obstruction cleared with forceps if necessary.

3. Many authors use an oxygen tent routinely for every infant who has had a bronchoscopy and feel that by its use they avoid a certain percentage of tracheotomies. They also use it for all tracheotomized cases and feel that in slowing the rate of respiration it allows better elimination of secretions.

4. The use of steam inhalations with or without compound tincture of benzoin aids immensely in preventing drying of secretions.

5. We should use all measures possible to encourage the formation of secretions and keep them fluid. The natural reaction of the infected and inflamed tracheobronchial mucosa is the outpouring of mucus. This formation must be encouraged and its removal facilitated. Hence we should use no atropine and no morphine or codeine. The first tends to make the secretions dry and the latter two obtund the cough reflex. If atropine is used or if the secretions dry without atropine hard crusts form which act as foreign bodies. Clerf has reported a case in which he performed fourteen life-saving bronchoscopies. The first was for the removal of a foreign body and the others for the removal of dried masses of secretion. Fluids should be given in large amounts by whatever method necessary. The use

of expectorants such as ammonium chloride and syrup of ipecac are very helpful.

In individual cases we may need all of the above measures or we may need none of them. Their use depends, of course, upon the indications in each particular case.

604 Medical Arts Building.

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#### ABERRATIONS OF EYES AND LENSES

In an historical review of the various forms of aberration of the eyes and of lenses, Edward Jackson, Denver (Journal A. M. A., Aug. 6, 1932), calls attention to the fact that spherical aberration, mentioned in all books on optics, is the insurmountable obstacle to ideal lenses. It has not been given the simple, comprehensive explanation that recognizes its dependence on obliquity of surface. On account of it, a perfect spherical lens never can give a perfect focus. Because it is the easiest to grind, the spherical form has been used for lenses from the time of the old gem grinder of Babylonia. Mathematicians who have studied optics have suggested other forms of surface that could furnish perfect or ideal focusing of light, but these have not proved practicable for any general use. It is almost impossible to produce exactly the surfaces planned, and if they were exact, slight movement of the eye from the designed axis of the lens would destroy any advantage it was expected to have. The aspherical lens of Gullstrand is an attempt in this direction. However, any one who has worked with it knows how exactly it must be placed to get the slight advantage it is supposed to have over a planospherical lens. Spherical aberration has been chiefly overcome in optical instruments by partly neutralizing the aberration of one lens by that of another. This was the plan used by Huygens in the eyepiece for the compound microscope that is known by his name. When the prescribing of glasses for hyperopia and astigmatism began, the opticians were fairly familiar with the effects of aberration in strong glasses and had a practical understanding of the importance of reducing obliquity of refracting surfaces. The empiric rules of turning the convex, or more convex, surface from the eye and the concave, or more concave, surface toward the eye were followed by the more competent opticians. To make this plan more effective, periscopic lenses having a base curve of 1.25 D. were put on the market as soon as the metric system of numbering was adopted. Later the so-called toric form, with a base curve of 6.50 D., was widely adopted. Still later, lenses still more strongly menisciform were introduced under copyrighted names, and extravagant claims of their superiority were pressed on the attention of ophthalmologists and the public by specious advertisements. The essential precaution to prevent and limit the aberration of oblique surfaces is to keep these surfaces as nearly perpendicular as possible to the rays that pass through them. The prism must be kept near its position of minimum refraction, the rays in the prism falling perpendicular to the plane that bisects its refracting angle. With lenses the rays should be as nearly as possible perpendicular to a theoretical or assumed curved surface, half-way between the two refracting surfaces of the lens. An understanding of this will make one safe from unjustified claims of superiority made by eager salesmen for the lenses they wish to sell.

## TUMORS OF THE NASO-PHARYNX

WM. L. BONHAM, M.D.  
OKLAHOMA CITY

Tumors of the naso-pharynx present a most interesting and frequently a most difficult problem to the rhinologist, not so much from the standpoint of diagnosis, for that is often comparatively easy, but more so from the point of view of successful treatment, which is often by far more difficult.

## CLASSIFICATION

Naso-pharyngeal tumors may be classified as connective tissue tumors and epithelial tumors. The connective tissue tumors may be divided into the benign and the malignant, the benign including the fibromas, angiomas, myxomas, chondromas, osteomas, polyps and endotheliomas and the malignant including the sarcomas and the lympho-sarcomas. The epithelial tumors likewise may be divided into the benign and the malignant, the benign tumors being the adenomas, and the malignant tumors the adenocarcinomas and the medullary squamous cell carcinomas. In a review of thirty cases of tumors of the naso-pharynx taken from the records of the Department of Oto-laryngology at the University of Michigan Hospital and two cases from the Department of Oto-laryngology of the University of Oklahoma Hospital, I found only fibromas, sarcomas, fibro-sarcomas, lympho-sarcomas, carcinomas, and one case each of myxo-chondroma, endothelioma, and granuloma pyogenicum angiectatum. G. B. New<sup>1</sup> records a case of actinomycosis of the naso-pharynx, while Bulson<sup>2</sup> records a case of teratoma of the throat with attachment just above and behind the tonsil and Beattie<sup>3</sup> reports a case of blasto-teratoma or mixed tumor of the naso-pharynx. However, in this article I will attempt only a discussion of the new growths, thus omitting the chronic infective granuloma and the teratoma.

## FIBROMAS

The majority of naso-pharyngeal fibromas occur in individuals between the ages of ten and twenty-five years, the youngest in the series studied being four and the oldest twenty-eight years of age. These tumors are confined almost entirely to the male, occurrence in the female being very rare. They are almost always single.

Clinically there are two types of fibromas, the fibroma molle (soft) and the

fibroma durum (hard). In color they vary from a pink to a dark reddish-blue; their consistency is firm; and their shape after they attain an appreciable size conforms to the shape of the naso-pharynx. They vary in size from a small growth situated in the vault of the naso-pharynx or in the region of the fossa of Rosenmuller to a large growth completely filling the naso-pharynx, involving the sinuses and extending far into the nares. Their growth is rapid but they do not metastasize or involve neighboring glands. They are only locally malignant and tend to recur after removal. Their point of origin may be the spheno-ethmoidal recess, the anterior surface of the base of the occipital bone<sup>4</sup>, the fossa of Rosenmuller, the pterygoid process<sup>1</sup>, the orifice of the eustachian tube or the cushion of the tube<sup>5</sup>, and the sphenoid, ethmoid or maxillary sinuses. The most common site of origin is from the periosteum covering the basilar process of the occipital bone, and from the body of the sphenoid sinus. Goldsmith<sup>4</sup> states that since fibromas are of periosteal origin the majority of fibromas tend to cease growth and undergo retrogressive changes after the age of twenty-three, by which time active periosteal growth had terminated, and the skull has ceased to develop.

In general, the symptoms produced by fibromas of the naso-pharynx are the result of obstruction and pressure<sup>6</sup>. Complete or partial nasal obstruction and severe hemorrhage are the rule. Deafness, tinnitus, otalgia, and otitis media are frequently the result of pressure on the eustachian tube. Any or all of the sinuses may be invaded. If the extension is sufficient to produce pressure on the optic nerve, optic atrophy will result. Exophthalmos from invasion of the orbit occurs late. Diplopia may occur as a result of pressure on the third or sixth nerves or it may be due to exophthalmos. Difficulty on swallowing may occur in cases in which the tumor has extended into the oropharynx. In this series of cases of fibromas, 100% of the patients complained of nasal obstruction; 75% had hemorrhage of varying degree; 50% complained of nasal discharge; 25% had exophthalmos and limitation of extra-ocular movements; 25% had swelling of the cheek; 25% had pain somewhere about the face or head; 16 $\frac{2}{3}$ % had ear-ache; none had any difficulty on swallowing, and none had discharging ears at the time they were first seen.

The symptoms in the cases of granu-



loma pyogenicum angiectatum, myxochondroma, and endothelioma were the same as might be produced by a fibroma, and the tumor masses were of about the same size and had the same general appearance as the majority of the fibromata.

#### CARCINOMA

The frequency of carcinoma of the naso-pharynx is greater than is commonly supposed, and such tumors are frequently not attended by any striking symptoms or marked discomfort to the patient until they have reached a very appreciable size. G. B. New<sup>1</sup> reports that 50% of malignant tumors of this region occur between the ages of forty-one and sixty years. The ages of those seen in our clinic varied between thirty-eight and sixty-four years, which closely agrees with the observations of Dr. New.

Carcinomas of the naso-pharynx may be small non-ulcerating or ulcerating epithelial growths situated in the vault of the naso-pharynx or laterally in Rosenmullers' fossa<sup>2</sup>, either unilateral or bilateral, or they may be larger cauliflower growths extending down the lateral angles of the pharynx. The first glandular involvement in malignancy of this area is usually high in the cervical region.

The symptoms produced by carcinoma of the naso-pharynx, like those of any other tumor in this region may be quite varied due to the close relationship of the naso-pharynx to the 2nd, 3rd, 4th, 5th, 6th, 9th 10th 11th and 12th cranial nerves, gasserian ganglion, sella-turcica<sup>3</sup>, eustachian tube, the nose proper, and the pharynx proper, and to the lymphatic drainage into the cervical glands. Among the most common of these symptoms are sore throat, dysphagia, hoarseness, blood streaked saliva, deafness, tinnitus, otalgia, diplopia, and cervical adenitis. Van Meter<sup>4</sup> states that the cranial nerves are usually involved. I found no one constant symptom in carcinoma of the naso-pharynx, but 80% of our cases in this class complained of varying degrees of chronic sore throat; 80% had involvement of the cervical glands; 60% had lost weight. Beyond this the symptoms were quite variable.

#### SARCOMA

Sarcoma of the naso-pharynx occurs somewhat less frequently than fibroma. Such growths may be found at almost any age, the youngest in our records being five years and the oldest fifty-six years.

Sarcomas<sup>5</sup> have much the same general appearance as fibromas, are of connective

tissue origin, spread toward the mucous surface first, and involve bone only a later stage. They are rather soft, very vascular, metastasize late, and show a great tendency toward spontaneous hemorrhage.

The symptoms produced by sarcoma of the naso-pharynx are those that might be produced by either fibroma or carcinoma. A review of our cases of sarcoma showed that 78% complained of nasal obstruction; 45% complained of pain; 45% had metastasis to the cervical glands; 33% had proptosis, limitation of extra-ocular movements and swelling over the cheek; only 23% gave a history of hemorrhage.

Due to the relatively large size of the tumor with its attendant symptoms produced by obstruction and pressure, and also due to the frequency of hemorrhage, fibromas, sarcomas and other connective tissue tumors are usually diagnosed without much difficulty. However, it is my opinion, that small epitheliomas of the naso-pharynx are frequently overlooked. I feel that there are a few patients who come to the office or to the clinic complaining of chronic sore throat, and on examination a pair of chronically infected tonsils is found, the examination of the naso-pharynx is neglected, and a tonsillectomy is advised. Within a few weeks to a few months following the tonsillectomy, the patient again returns to us complaining, in addition to the chronic sore throat, of blood streaked saliva and possibly of some swelling of the glands of the neck. On careful examination of the naso-pharynx, a small epithelioma is found laterally in the region of the fossa of Rosenmuller or in the vault of the naso-pharynx.

By this time, metastasis has already taken place and the implantation of radon seeds or radium needles in the primary lesion is of little or no value. If, however, at the time the patient first consulted us because of his chronic sore throat, a careful examination of the naso-pharynx had been done and the malignancy discovered before metastasis had taken place, a cure might possibly have been effected, provided this were the radio-sensitive type of lesion. For this reason, I believe that a most meticulous examination of the naso-pharynx should be performed in all patients complaining of chronic sore throat or a chronic naso-pharyngitis.

#### TREATMENT

There are only two methods of treatment of tumors of the naso-pharynx, *viz.*,

surgical removal and the application of radium and X-ray. Radium and X-ray as a primary course of treatment have only one application, and that is in carcinomas of this region, where metastasis takes place early and surgery is absolutely hopeless. Secondary, X-ray and radium are of value in cases of any other type of tumor which tends to recur after operation. The dosage of radium and X-ray varies with each individual case. Van Meter<sup>8</sup> has used as much as 900 mg. hrs. of radium in the post nasal space for post nasal carcinoma. Mertens<sup>9</sup> recommends 50 mg. hrs. of radium for each c.c. of tumor tissue. Colwell<sup>10</sup> of London, reports a case of apparent cure of lymphosarcoma of the naso-pharynx six and one-half years after treatment. He used two 50 mg. tubes of radium bromide for 6 hours, repeated X-ray treatments, radium again in 17 days and then further X-ray treatments.

Of all forms of radium, I believe the most convenient to use are the radon seeds, which are either platinum, gold or glass seeds impregnated with radium energy. By means of special introducers provided with a stylette, these seeds are planted into the tumor mass approximately 1 cm. from each other and not closer than 1 cm. to any vital structure. The platinum seeds are attached to threads which are fastened to the side of the cheek with adhesive tape after insertion. They are 3 millicurie seeds. The dosage is the one-half value period (4 days) of a 3 millicurie seed. The gold and glass seeds are 1½ to 2 millicurie seeds and are allowed to remain in place indefinitely. The advantage of the platinum seed is the greater accuracy in determining the dosage that the patient receives.

Another form of radium which is rather convenient to use is the radium needles, the dosage varying with the size of the lesion. X-ray therapy of the naso-pharynx and of the neck should follow in a week or 10 days, the dosage and the manner of application varying with each individual case and being decided upon only after an initial application.

The only satisfactory treatment of new growths of the naso-pharynx other than carcinomas, however, is surgical removal. Several such procedures are in practice, but the one which we have used chiefly in fibromas, sarcomas etc., is the avulsion of the tumor with a pair of broad bladed, strong uterine grasping forceps. After the blades have firmly grasped the tumor behind the soft palate, forcible traction

and rotation are applied. If multiple or if pieces of the tissue remain behind, the submucous biting forceps or Knight's polypus forceps are used to remove the remaining tissue through the nose. The hemorrhage is frequently quite profuse, especially in fibromas and sarcomas, and is occasionally a source of considerable annoyance as well as danger. Shock in these cases may be quite marked. Preliminary laryngotomy has been suggested to prevent the blood getting into the trachea<sup>4</sup> and preliminary ligation of the external carotid artery is occasionally done. Likewise, Maitland's clamp<sup>11</sup>, a modification of Criles forceps for temporary clamping of the common carotid artery is used, this clamp being encased in soft rubber to avoid injury to the vessel. Another operative procedure which may be used when the tumor is sessile and cannot be removed by avulsion is Kocher's Osteoplastic Flap Method<sup>12</sup>. If the tumor involves the ethmoid and sphenoid sinuses a radical exenteration of the ethmoid and sphenoid by the external route is imperative, while if the antrum is involved the Caldwell-Luc operation is employed. In certain cases, it may be necessary to enter the pterygo-maxillary fossa due to invasion of this fossa by the tumor. Extension of the tumor into the orbit necessitates orbital exenteration.

#### COMMENT

1. As a general rule, tumors of the naso-pharynx occurring in young individuals are more likely to be connective tissue tumors.

2. Diagnosis is extremely easy except in the case of small epitheliomas which may be missed unless the naso-pharynx is examined carefully.

3. The prognosis for life in the non-malignant type of tumor is fairly good, especially if a relatively early diagnosis is made; the prognosis for life in the malignant type of tumor is poor.

4. The treatment for all tumors except carcinoma is surgical, the type of operation depending on the location and extent of the tumor; this is followed by radium and X-ray if indicated. Radium and X-ray alone are indicated in carcinoma of this region, as surgery here is hopeless.

#### CASE REPORTS

Case No. 1. This boy, age 11, entered the University of Michigan Hospital with a painless swelling over the left cheek, proptosis of the left eye, a large firm red mass in the naso-pharynx, and a history of frequent epistaxis. The biopsy



report stated that this was an ulcerating granuloma pyogenicum. The tumor extended into the antrum, orbit, sphenomaxillary fossa, nose and naso-pharynx. At the first operation, February 18, 1926, the tumor was removed from the naso-pharynx, and a left radical antrum operation was performed. The hemorrhage was very profuse, the operation was stopped and a blood transfusion was given the patient. On January 29, 1927, a recurrence of the tumor in the naso-pharynx was removed by avulsion. On April 30, 1927, the left external carotid artery was ligated, an incision was made through the left eye-brow and down over the temporal region toward the ear for a distance of two inches beyond the external canthus, the sphenomaxillary fossa was exposed, the zygoma first being removed, and the tumor was removed as thoroughly as possible, but was found to extend into the orbit, and down about one inch to the naso-pharynx. The operation was stopped with the pedicle of the mass still in the orbital cavity. On October 5, 1927, an exenteration of the left orbit was attempted, but the hemorrhage was so profuse that the operation was abandoned, and then completed five days later. Again on January 23, 1928, small piece of post-nasal tumor was removed. Radon seeds were inserted into the small piece of remaining tumor on February 8, 1928, and four days later the seeds were removed. The patient was discharged with no evidence of recurrence.

Vigorous X-ray therapy was later instituted. He returned to the hospital on June 6, 1929, with a recurrence the size of a walnut in the left naris and naso-pharynx. The department of roentgenology believed that further X-ray or radium therapy was contra-indicated due to the previous strenuous treatment, thus leaving us no alternative but further operative procedure. This operation was performed and the patient discharged from the hospital in good condition a few days later.

Case No. 2. This patient, a boy 17 years of age, entered the hospital June 5, 1929, complaining of nasal obstruction which had been present for several months. The tonsils and adenoids had been removed two and one-half months previously with no relief. Examination showed a large firm mass completely filling the naso-pharynx and obstructing the left naris posteriorly. There was also slight swelling in the left alveolar-buccal area posteriorly. X-ray examination of the sinuses showed both antra and the left ethmoid air cells to be cloudy. On June 19, 1929, the tumor was removed from the naso-pharynx by avulsion, with practically no hemorrhage. The Pathology Department reported the tumor to be a "fibroma with many thin walled dilated blood spaces, a true neoplasm, but without malignancy in areas examined, and will recur if not entirely removed." The patient was discharged on June 29, in a satisfactory condition.

On December 5, 1929, the patient returned to clinic with a recurrence of the tumor in the naso-pharynx, and with a large firm swelling in the left cheek, the mass extending back to the region of the sphenomaxillary fossa. There was also a definite proptosis of the left eye. X-ray examination of the sinuses showed only a haziness of the left antrum, and no evidence of destruction of the floor of the orbit. The department of ophthalmology reported the fundus examination to be negative except for a swelling of one diop-

ter in the left eye. The exophthalmos measured 15 m.m. O. D. and 23 m.m. O. S.

On December 14, 1929, the second operation was performed. An incision was made through the mucous membrane of the cheek just posterior to the orifice of Stenson's duct. The tumor was gradually separated from the surrounding structures and traced back to the sphenomaxillary fossa where it was joined with the original mass in the naso-pharynx through the sphenomaxillary fissure. After the mass in the cheek and sphenomaxillary fossa had been removed as thoroughly as possible the recurrence in the naso-pharynx was removed by avulsion with Jackson's forceps. The hemorrhage was profuse. Three large packs were used, one in the cheek, one in the naso-pharynx, and one in the nose. The Pathology Department reported the specimen to be an "angio-fibroma, not cellular enough to be called a sarcoma, rather a fibroma durum." On December 28, 1929, the patient was discharged from the hospital in good condition.

Case No. 3. This boy, age 13, was admitted to the Ophthalmology Department of Crippled Children's Hospital at Oklahoma City on July 20, 1931. He gave a history of diplopia beginning in March, 1931, and about two weeks following the onset of the diplopia, it was noticed that the left eye-ball was protruding. The proptosis had increased rapidly. There was no history of pain, dysphagia, hemorrhage, or nasal obstruction. The vision was good in both eyes. On July 29, 1931, I saw this patient at the request of the Ophthalmology Department. There was a proptosis of the left eye with limitation of extra-ocular movements in all direction. The tonsils were hypertrophied and the naso-pharynx was negative except for hypertrophied adenoids. The right nostril was negative while in the left nostril was a rather large firm yellowish-red mass arising from the region of the middle meatus anteriorly. The ears were negative. X-ray studies of the nasal accessory sinuses showed a cloudiness of the left antrum and ethmoids. A tentative diagnosis of fibroma or fibro-sarcoma of the left ethmoid labyrinth, antrum and orbit was made. A biopsy taken on July 31, 1931, was reported as sub-acute inflammation, either tuberculosis or syphilis, and a biopsy on August 10, 1931, was reported as sub-acute inflammation. The blood and spinal fluid Wassermanns were negative. Physical examination and X-ray showed no evidence of tuberculosis.

On August 20, 1931, a biopsy of the tumor in the orbit was done and a frozen section made. The report was still that of sub-acute inflammation. A radical ethmoid, sphenoid and antrum operation was immediately performed by the external route. The firm tumor was found to fill the ethmoids and the medial and inferior portion of the orbit and to extend from the posterior surface of the eye-ball to the apex of the orbit. The floor of the orbit was eroded and the antrum filled with the tumor. The ethmoids were completely exenterated and all of the tumor which could be palpated in the orbit was removed. The usual Caldwell-Luc operation was done and the same type of tumor was removed from the antrum. The pathological diagnosis was that of epulis or giant cell sarcoma. The convalescence was uneventful, and after radium and X-ray therapy, the patient was discharged from the hospital on September 21, 1931, with a marked decrease in the proptosis. On October 19, 1931,

I again saw this patient. The degree of exophthalmos was no more marked than when he was discharged from the hospital and was much less than previous to operation. There was a rather marked fullness at the site of the scar, but this was to be expected. On April 25, 1932, there was no further change in his condition and no evidence of recurrence. The vision in both eyes was normal except that there was a slight diplopia.

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## THORACOPLASTY IN PULMONARY TUBERCULOSIS: GENERAL AND ECONOMIC CONSIDERATIONS

Kennon Dunham and Esleie Asbury, Cincinnati (*Journal A. M. A.*, July 30, 1932), points out that thoracoplasty and phrenicectomy are established adjuncts to the treatment in selected cases of pulmonary tuberculosis. Positive sputum is the chief indication for thoracoplasty in cases otherwise suitable. Continuation of positive sputum after thoracoplasty indicates need of further collapse. The sputum may continue positive after complete collapse or become negative with incomplete collapse. In any case, the only criterion of a successful thoracoplasty is a living patient with continuously negative sputum. The authors suggest a plan to give the benefit of surgical procedures to both private and indigent patients with pulmonary tuberculosis, and stress the economic value of thoracoplasty. They make a plea for further study of the effort syndrome in prospective thoracoplasty patients and of the cause of the occasional operative death within the first forty-eight hours. Cardiac damage and emphysema of the good lung should be estimated before operation. The Wilms-Sauerbruch technic of paravertebral thoracoplasty in two stages is recommended, removing portions of ten ribs, including the first, as close to the transverse processes as possible, taking the lower ribs at the first stage. The use of acacia instead of the transfusion of blood is recommended to combat shock because of its safety, reliability and cheapness.

## BILATERAL ORBITAL ABSCESSSES FOLLOWING SINUSITIS— CASE REPORT\*

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We believe that the unusual character of the case we are reporting makes its recording worthwhile and that it offers points of interest from several angles—diagnostic and otherwise—to the general surgeon which justified its presentation to this section, particularly since it is the general practitioner or general surgeon who sees such cases first rather than the specialist.

### CASE REPORT

J. D. P., a white schoolboy of 15, left school at noon on October 30, 1931, because of a severe headache in the back part of his head. Some fever was believed present, amount not determined. A physician was called who referred the patient to an eye, nose and throat specialist on the following day when the headache and fever persisted. Examination by the specialist revealing no abnormalities, the boy returned home and continued to suffer from unremitting headache of such severity that repeated doses of morphia had little effect. Fever and chilly sensations continued daily. There was no vomiting or dizziness. On November 6, 1931, a shiny, red spot appeared at the root of the nose and spread with some rapidity over both infraorbital regions. Another physician was then summoned and immediately made a diagnosis of facial erysipelas. Accordingly, treatment with ice packs, antistreptococcal vaccine in large, repeated doses and ichthyl dressings was instituted until November 12. By this time the entire scalp had become enormously swollen, both eyes closed, and eyeballs protruding, a purulent, bloody discharge present from both nares; cheeks, upper lip and forehead much swollen. Repeated chills and fever to 103.5 degrees occurring daily. This condition persisted with the patient's general condition growing steadily worse until the afternoon of November 17, when he was first seen by us.

The patient's past history was not significant, measles and chicken-pox occurred in childhood. No previous complaint of discharging or painful ears; patient's mother declared he had never suffered from head colds or sinus trouble. Beyond smoking of about a pack of cigarettes daily, habits were good, appetite and digestion excellent, elimination normal, no nervous disorders or headaches had been present. Family history irrelevant.

Physical examination revealed a youth of apparently normal height for his age, 15, who showed evidences of recent, rapid emaciation. He lay still in bed and mumbled incoherently constantly and resented any attempt to examine him. Eyes were closed, respirations stertorous and about 32 per minute, pulse rate 120, regular and full. Temperature 103.2 degrees. Tendon and

\*Presented at Oklahoma State Medical Association Meeting, Tulsa, Oklahoma, May 24-26, 1932.



pupillary reflexes present and normal, no pathological reflexes present.

The head was grotesque in appearance. It seemed to be almost twice normal size and because it was entirely encased in a layer of ichthyol which had to be scraped away little of the skin detail could at first be made out. Both eyes were truly exophthalmic, there was marked chemosis present on both sides. There was no corneal ulceration but the conjunctiva of both lower lids was ulcerated. Eyeballs could be slightly moved downward. Examination of the fundus revealed engorged veins of increased tortuosity but no other abnormalities. Media clear. The scalp and forehead presented a brawny oedema and numerous pustules. The root of the nose was very much broadened and swollen. The upper lip was about four times the size of the lower but presented no evidence of cellulitis. There was a dried sanguinopurulent discharge about both nares and examination with a speculum showed liquid pus in considerable quantities on both sides—the turbinates were reddened but otherwise normal. Mastoid regions were negative, both ears showed no abnormalities. The chest examination revealed no abnormalities but a quickened, stertorous respiration and a rapid pulse rate. Heart not enlarged. No oedema over neck or upper thorax. Abdomen and extremities presented no abnormalities.

The boy was removed to the hospital the same afternoon, being admitted with a tentative diagnosis of pan-sinusitis; cavernous sinus thrombosis versus bilateral orbital abscess originating from ethmoid cells; cellulitis of face and scalp. Supportive treatment was instituted and an ear, nose and throat consultant called. The consultant was unwilling to commit himself to a definite diagnosis, although agreeing that sinusitis was present and that there was no evidence of erysipelas. We had never heard of a case of bilateral orbital cellulitis or abscess following sinusitis although such cases following erysipelas have been reported so we made the alternate diagnosis somewhat apologetically.

Within 14 hours of admission, after repeated hypodermoclysis of normal saline, the patient became entirely rational, talked, smoked, and ate with apparent relish. Under hot, continuous packs of boric acid solution the swelling about the face had slightly subsided by the morning of November 10 and a portable X-ray examination of the sinuses was made. However, the swelling of the soft tissues and inability to get full cooperation of the patient resulted in no definitely abnormal X-ray findings. By the 20th the patient was able to open his eyelids a bit and was able to recognize relatives and describe objects quite clearly, bearing out our original ophthalmoscopic observations. We felt more inclined than ever to discount the probabilities of cavernous sinus thrombosis and to believe that bilateral orbital abscesses were present. A purulent discharge from the nares continued and local treatment was used at the suggestion of our ear, nose and throat consultant to keep the mucous membranes shrunken. On the 20th both parotid regions became involved and there was considerable tenderness in the left mastoid region. However, examination disclosed no evidence of left middle ear pathology. On this date also an urticarial rash covered the patient's back and arms—probably a result of "serum reaction."

On November 22 four points of suppuration

about the face were noted and drained. The acute parotitis continued and fever continued septic in type but patient remained rational and insisted on a generous diet and his cigarettes. On November 23 a stab wound at the outer canthus of the right eye drained about 3 drams of thick yellow pus from the right upper eyelid and temporal region. Smears and cultures were reported "gram positive diplostreptococcus." A drainage from the outer side of the left eyeball was noted in a rather profuse amount on this date and, smears and cultures showed a gram positive diplostreptococcus. A stab wound of the left parotid gland (Hilton technique) obtained no pus but relieved tension considerably.

On November 24 all drainage continued and the patient was mentally quite disturbed and complained of severe pain in the right ankle.

On November 25 under ethylene anesthesia Hilton technique was used to drain both orbital cavities through incisions at the inner part of the margin of the upper orbital rims—also at lower orbital rims. Profuse purulent discharge was obtained from all four incisions and rubber tissue drains were inserted. Our ear, nose and throat consultant felt that the patient's condition did not justify an attempt at exenteration of the ethmoid cells.

On November 26th the patient seemed considerably improved, diathermy was used to the parotid regions and the swelling began to subside. Drainage continued from all incisions about the orbits but the patient pulled our drains out and much difficulty was experienced in keeping the openings from healing.

On November 28 the blood culture made November 18 was reported positive with the finding of a gram positive diplo-streptococcus. A corneal ulcer began to develop on the right eye. All drainage continued and the left exophthalmus had almost subsided although the right was still marked. The septic temperature continued with a pulse rate of 130-148 constantly present. Complication we had long feared but anticipated became manifest on December 4th with evidence of lung involvement on the left side. X-ray plates showed evidence of metastatic abscesses in the left lung and our patient's general condition became very poor. From this date until the morning of December 11 when death occurred the outcome was never in doubt despite several remarkable rallies. Incisions had to be made in both temporal regions to drain pus which had evidently overflowed the orbital rim and gravitated to these regions. On December 9 a large amount of purulent material was discharged thru the left nostril and much of the swelling of the root of the nose disappeared. On this date also patient became aphasic and we concluded that metastatic brain abscesses were developing. Strangely enough by the morning of December 10 the head had resumed almost its normal appearance and there was only a slight residual right exophthalmus. By this time however, both lungs were completely involved by pneumonia and the patient who had throughout displayed remarkable resistive and recuperative powers was overwhelmed.

From the laboratory standpoint there is nothing unusual to report. A positive blood culture was obtained, the leukocyte count rose gradually from 19 to 33,000 and the leukocytic index from 1.12 to 1.59. The offending organism was a diplo-

streptococcus. Unfortunately permission for an autopsy could not be obtained and post-mortem X-ray pictures although made were not of any further assistance.

A survey of all the available literature fails to reveal a single case report of a bilateral orbital abscess following sinusitis although very many unilateral cases have been recorded. Following erysipelas, bilateral infection has not been such a rarity but the history of this case and all our findings are definitely against erysipelas and point unerringly to sinusitis as the exciting cause. There are three chief causes of orbital cellulitis:

1. Nasal sinus infection.
2. Skin infections, *e. g.*, erysipelas, impetigo, bites, boils, etc.
3. Osteomyelitis or periostitis of the orbit from a blood stream infection. The prognosis is best in the cases whose etiology is in the first group, incidentally this group is the most important etiologically.

The ethmoid cells have been most often the original focus, the frontal sinuses being next and the maxillary very rarely. There seems to be four ways<sup>2</sup> by which orbital cellulitis and abscess can be developed from sinus infections.

1. By extension of the inflamed process through apparently intact bone.
2. By thrombosis of one of the large veins perforating bone and so spreading infectious material to the other side.
3. By direct extension of the ulcerative process to the bone with periostitis, osteitis, and finally necrosis with perforation.
4. Extension of inflammatory process through dehiscence in the bony wall.

One of the arresting features of the case is the fact that the orbital abscesses developed during the first acute attack of sinusitis this patient apparently ever had. Had there been a chronic sinus condition with gradual erosion the complications might have more easily been explained. However, we are of the opinion that the extension occurred either by venous thrombosis or by dehiscence.

The differential diagnosis from cavernous sinus thrombosis in this case was not

so difficult as is usual. Babbit<sup>3</sup> declared that "a concluded diagnosis will frequently be reversed by autopsy findings." Of course we were unfortunately unable to obtain an autopsy but the actual findings and drainage of pus from both orbits proved conclusively that abscesses were present although we must admit the possibility of cavernous sinus thrombosis also being present. Babbit gives the differential diagnosis as follows:

1. Exophthalmus present in both but oedema of surrounding parts greater when orbital abscess is present—in our case there was marked oedema over a great area.
2. Rotation of eye upward, downward, etc., by inflammatory pressure in cases of orbital abscess—this does not necessarily occur in cavernous sinus thrombosis.
3. There may be diminished vision in both, usually greater in cavernous sinus thrombosis and fundus changes in this condition are retinal oedema, venous dilatation, clouded media, at times disc changes. In orbital abscess usually only venous congestion and increased tortuosity is found. Impairment of vision, if present, being due to retrobulbar swelling only.
4. Involvement in cavernous sinus thrombosis as, ptosis and pupillary dilatation due to oculomotor involvement; occasionally fixation of eyeball; papilledema. This does not occur in orbital abscess.
5. The orbital swelling has the brawny, indurated feel of cellulitis in cases of orbital cellulitis and abscess.
6. Septic symptoms are, of course, present in both and blood stream infection may be proved present in both although more usual in cavernous sinus thrombosis.

On the basis of the foregoing differentiation and our actual finding of pus in both cavities there could hardly be doubt as to the diagnosis. It was interesting in reviewing the literature to note that in several cases<sup>4</sup> the rhinologist failed to discover evidence of ethmoiditis, orbital



cellulitis developed and only at operation was pus found in the post ethmoid cells. Again, one case was reported<sup>7</sup> as erysipelas and ethmoid empyema found when orbital cellulitis had developed. Therefore one must be on guard to avoid these mistakes.

Treatment has been successful in many unilateral cases and has consisted in most instances of drainage of both the sinuses and the orbit<sup>6</sup>. Unfortunately our patient was seen almost in extremis when any radical procedure such as submucous resection and ethmoid cell exenteration, particularly bilaterally, would have been immediately fatal so our rhinologist had to content himself with local nasal treatment although we did secure good drainage of the orbits. It seems to us that prophylaxis in this as in all other conditions, is the best treatment. With symptoms such as our patient exhibited for days, careful X-ray examination of the sinuses was absolutely indicated. Once the diagnosis had been established drainage could have at once been instituted and the orbital complications forestalled. Once cellulitis does occur, immediate drainage of the orbit should be instituted. The upper, inner angle of the orbit is selected as the point of drainage Hilton technique being employed. It is necessary to avoid damaging the pulley arrangement of the superior oblique muscle in this locality.

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#### PHYSICAL CHARACTERISTICS OF HIGH FREQUENCY CURRENT

Allan Hemingway and W. K. Stenstrom, Minneapolis (Journal A. M. A., April 23, 1932), emphasize the fact that the small amount of physical knowledge acquired as a premedical student is likely to be temporarily forgotten under the overwhelming load of anatomy, chemistry, physiology and so on. It is for this reason that they commence their paper with a brief review of some of the fundamental principles of electricity that are applicable to the action of high frequency. They then give a detailed discussion of the applications of physical and chemical theory in diathermy and the methods and clinical use of short wave therapy (radiotherapy).

#### THE EXAMINATION OF THE EARS IN INDUSTRIAL CASES

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This paper is written with the idea of giving a resume of the ear examination of industrial cases, with special reference to exaggerators and malingerers.

There are three general types of cases referred for examination, where more than average care is needed to prevent industrial corporations or insurance companies from being unjustly imposed upon by unscrupulous lawyers and their accomplices.

The first type is that of the laborer who has a defect, such as an old suppurative media and goes to work for a company. After working a few days, he reports that he bumped his ear against a scaffold or got lime in his ear or some such injury, causing it to discharge and impair his hearing.

The second type is the man who receives a head injury and later states it has ruined the hearing in one ear. In these cases, there may or may not be a skull fracture present.

The third type is that of the laborer who sees some of his fellow workmen getting large awards for actual impairment of hearing, acquired while shutting off wild wells. His palm begins to itch, and he is then ripe for a lawyer to see. These men may have a small amount of impairment at first and later clear up entirely, or may still have a residue of impairment and try to exaggerate their claims.

To take the first case, examination shows either a foul smelling discharge from old cholesteatoma, or a mucopurulent discharge from a eustachian tube, discharging upward into the middle ear. The perforation will have round, annealed edges, rather than thin sharp irregular or elliptical edges and often times, granulation tissue or polypi will be present. Often the bones will be eroded or the drum absent and this takes years to occur. An X-ray will show a hard eburnated mastoid to compare with the normal side, since these are old unoperated mastoiditis cases. Usually if the hearing is impaired, there is a self evident reason present to account for the impairment.

These cases should have careful hearing and fistula tests and caloric douches

to ascertain how much of the inner ear is affected, as well as the middle ear. An estimate should then be made of the amount of destruction present, the length of time it has been present, whether it should be treated or operated, whether it could be due to the accident complained of, and whether it can be repaired by any means.

The second type may have had loss of consciousness, skull fracture, and brain contusion or oedema. It is pretty well established that it is next to impossible to produce by injury, a central deafness more central than the geniculate body. Since each ear has bilateral central representation, it takes a lesion in the anterior end of both temporal lobes close to the transverse fissure, to produce complete central deafness in one or both ears. Dandy has completely expired the left temporal lobe in a patient and the complete right hemisphere in another without demonstrable defects or hearing. I believe hearing impairment from oedema or contusion of the brain practically never occurs. If the fracture extends through the petrous portion breaking the nerve, then of course complete loss of hearing and vestibular function of the peripheral type occurs. Complete loss of hearing accompanied by violent dizziness, nausea, palor and sweating, and paralysis of the accompanying 7th nerve makes the diagnosis simple.

Theoretically the fracture may extend obliquely across the vestibule or canals and the cochlea escape, or the cochlea may be affected and the vestibule escape. This is more theoretical, however, than actual, because the accompanying hemorrhage, oedema, serious exudation, infection, or loss of endolymph from such an injury would sooner or later affect the remaining unfractured part. My experience has been that either there is complete loss of both hearing and vestibular function or else both escape, except for the possible conductive impairment produced by rupture of the drum or blood in the middle ear.

The third type, or the malingerer who may have had some slight impairment from the noise of a wild well and who comes in later for increased awards, is the hard case.

The noise and reverberation produced by a hundred million foot gasser running wild, cannot be compared to anything less than a continued clap of thunder in the

ears. There is both a mechanical defect due to the impact of the sound wave against the drum, and excessive stimulation of the hair cells that tires them out much the same as excessively bright light uses up the visual purple of the retina. The noise to which an aviator in a closed cockpit behind a 400 horsepower engine, or a boiler maker inside a boiler with an air hammer going, is very small compared to that to which these men are exposed.

The noise of a single large impact as that to which gunners are exposed is a different kind of injury. This last is actual trauma to the middle or inner ear, comparable to a blow against the ear, while the wild well produces over stimulation, more than actual trauma.

These men wear all types of devices in the ear canals to break the impact of the loud noise and have more or less success with them. The ones who receive the worse defects are those working in the cellar where the closed walls evidently intensify the impact. Those having closed eustachian tubes usually get a larger injury to that ear because of the slowness with which the middle ear accommodates itself to this great outside pressure on the drum.

These men usually have large impairments to start off with. This will last about a week, then the hearing begins to improve and continues to do so for about four or six weeks at which time the maximum recovery is reached.

When first examined they show impairment of the nerve type, in that bone conduction is markedly reduced and in some it is almost impossible to stimulate the nerve by bone conduction. The vestibular apparatus is affected but little and cold caloric douches will produce good and equal nystagmus of proper direction, time and quality and equally good nausea, sweat and vomiting with proper post-pointing and falling.

A few gentle inflations to pull the staples out of the oval window, and time, usually produce best recovery in about six weeks from the time of the accident.

If the impairment is small as is usually the case in laborers not working in the cellar, these ears will become normal again. If, however, the impairment is large, there may be degeneration of the entire 8th nerve with impairment of the vestibule as well as the cochlea, and this is generally bilateral.



When a malingerer appears with a complaint of impaired hearing in one ear it is as a rule very easy to catch him. There are four or five tests, one of which will usually be successful. The one most commonly used is to place, with the patient's eyes closed, the stethoscope in his ears and then talk into the bell, pinching first one tube and then the other, so that he hears first in one ear then the other. If he can carry on a conversation, he must theoretically hear some of the words with each ear. This, however, is not fair to the patient unless the conversation is carried on in a whisper, because he can hear ordinary conversation in his good ear even with the canal to that ear closed.

Another test which is conclusive when it works: This is to place a Barany noise apparatus that is sounding, alternately first in one ear, then in the other and talk to him while this is being carried out. One must be careful at first to ask questions when the noise apparatus is not running, then after one or two exchanges, ask him another question while the noise apparatus is running in his admittedly good ear. For instance, I place this apparatus in his good ear and let it run a second and then take it out and say, "you hear it well in this ear?" then place it in the questionable ear and after it runs a second take it out and say, "not so good in this ear?" then I place it back in his good ear and while it is running in this ear say, "but you hear it plainly in this ear?" If he answers the question, he can hear ordinary conversation at close range with the questionable ear and cannot have more than 50 percent impairment in it. I have yet to see a malingerer who would not answer the third question and of course the Barany noise apparatus running in the good ear completely excludes it from hearing.

Another test where he admits hearing conversation at close range is to have him place a stopper tightly in his good ear and after making a few tests start a sentence and walk across to the other side of the room and open a door or close a window while talking. You can by this means get fairly accurate information as to whether he heard all of the sentence or only the part spoken close to him.

Another test is after closing his eyes, have him place a stopper tightly in his bad ear and at 20 feet distance repeat words or figures in a low tone, which he will of course be able to repeat. Then have him exchange the stopper to his good

ear, he will then of course not repeat the test words given him. Now, as though you were satisfied that he cannot hear, you say in the same tone of voice "alright that will do—change the stopper to the other ear." If he is malingering he will in most cases, carry out the command which proves that he hears low conversational tones at 20 feet which is normal. Often times other commands such as "turn your head to the left" or "open your eyes" may be carried out corroborating the first observation. Occasionally he will begin to carry out a command, then catch himself and stop the movement.

If the injury be such as might produce a nerve impairment, then I have worked out another test which is conclusive. It is accurate because the patient gives his answers in terms of hearing with his good ear, with which he is not trying to mislead the examiner.

Take an ordinary auscultation tube and mark off in the center of it two lines about two inches apart, then the remaining distance to each ear clip, mark off in four equal divisions with white chalk. Have him close both eyes and insert the clips in his ears. Now if a vibrating tuning fork handle be placed against the middle section of this tube, a normal person will hear it in both ears, but if the fork be moved toward either ear more than an inch, it will become so loud in the nearer ear that he will not hear it at all in the other. Then all you have to ask him is to tell you when he does not hear the fork in his admittedly good ear. The fork is then started vibrating and placed in the center section and he will hear it in both ears, but admits he hears it only in his good ear. His eyes are closed. Then the fork is moved toward the bad ear and he is told to say when he ceases to hear it in his good ear. He of course does not know how you have moved the fork. As it moves more than one inch toward the bad ear the hum ceases entirely in his good ear and he will say he can no longer hear it in his good ear. This proves the bad ear is good enough to completely overpower his admittedly good ear. If there be a nerve defect of some degree in the bad ear, then the tuning fork must be moved nearer and nearer toward the defective ear before it will overpower the unaffected ear. If the fork must be moved half of the distance between the middle of the tube and the ear before the sound ceases in his good ear, then he has about a 50 percent nerve

deafness in the bad ear. The hearing by this test is entirely by bone conduction.

Of course if the patient is not a malingerer, then it is very easy to tell by tuning forks or audiometer, whisper, watch, acuminometer and Galton Whistle, the exact nature of the lesion, amount of impairment, type, etc.

In my opinion an audiometer gives no information that cannot be obtained by tuning forks. I do not believe any machine can take the place of accurate observation and thinking, any more than a machine can be made that will take out an appendix. The audiometer testing is entirely subjective and therefore, liable to error if the patient is malingering.

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#### PAINLESS JAUNDICE: ITS DIFFERENTIAL DIAGNOSIS BY GALACTOSE TOLERANCE TEST

According to Harry Shay and Eugene Schloss, Philadelphia (Journal A. M. A., April 23, 1932), the galactose tolerance test is a simple, ready means of identifying a clinically difficult group of cases, namely, the toxic or infectious jaundice group, and of separating it from the obstructive type which frequently masquerades in identical symptomatology. Particularly is the latter true in the cases seen in middle and in later life, when the consideration of malignancy is always looming in the foreground. The value of the test is further enhanced by the simplicity of the technic involved. After an overnight fast, the patient is given exactly 40 Gm. of galactose. This is usually administered in two glasses of water (approximately 500 cc.) and may be flavored with a few drops of lemon juice. During the five-hour period of the test, the patient may drink as much water as desired in order to insure full elimination of any nonutilized sugar, but is permitted to ingest absolutely nothing else. Specimens of urine are collected at hourly intervals for five hours, care being exercised to secure the total amount of urine voided during the entire test period. When the test is completed, the total quantity of urine is measured and mixed; estimation of the amount of sugar present is determined according to the Benedict quantitative method, and the total amount of sugar excreted during the period of the test is calculated. In diabetic patients a special technic is employed to separate the dextrose from any galactose excreted. A normal individual may excrete from 0 to 3 Gm. of galactose after the ingestion of 40 Gm. of that sugar. However, when the liver cells are acutely and diffusely damaged, as in a toxic or infectious process, the carbohydrate function of the liver is impaired, and, as a result, amounts of galactose greater than 3 Gm. are excreted in the urine in the five hours following the ingestion of 40 Gm. of that sugar. Since this type of liver cell damage is frequently accompanied by jaundice this test finds its greatest usefulness in differentiating the toxic or infectious jaundice from the obstructive and hemolytic types.

#### PERFORATION OF THE NASAL SEPTUM\*

HOWARD S. BROWNE, M.D.  
PONCA CITY

In reporting a case of traumatic perforation of the nasal septum, I wish to review briefly a few of the more common causes of this trouble which we as nose and throat specialists see quite commonly, and as a rule do little to relieve.

##### ETIOLOGY

Ballenger<sup>1</sup> states that the causes of perforation of the septum may be divided into: (a) congenital; (b) chronic granuloma; (c) traumatic; (d) acute infection; (e) atrophic or perforating ulcer. The first cause is extremely rare, a few cases having been reported by Zukerkandl. Under the second cause may be listed syphilis, tubercle and lupus. Traumatic perforations may be due to surgical procedures, accidental violence and picking the nose with the finger nail, and may be found in either the cartilaginous or bony portion.

Perforations may follow acute infectious diseases as diphtheria, scarlet fever, typhoid fever and phlegmonous abscess. Atrophic perforations is probably the most common type. An anterior spur or deviation is usually present and as it projects into the current of inspired air it is subject to the constant mechanical irritation of dust and the dried secretion which accumulate upon it. The crusts formed are forcibly blown and picked off, the epithelium comes away, and nosebleed is quite common. A retrograde process continues until the entire thickness of the septum is destroyed. Infection is usually present and assists in the above condition.

##### SYMPTOMS

The symptoms of perforation vary with the size, cause and location of the hole. Those involving the bony portion are usually the result of a syphilitic necrosis and are accompanied by an offensive odor. Later we have a deformity sometimes resulting in a saddle back nose, and occasionally the entire soft portions of the nose, no longer supported by cartilage, fall and produce ugly deformities. There may be blocking of the nasal passages with crusts or scabs which accumulate upon the margins of the opening. These not only cause

\*Read before the Section on Eye, Ear, Nose and Throat, Oklahoma State Medical Association, Tulsa, Oklahoma, May 25, 1932.



an obstruction to nasal respiration but produce a tickling sensation which prompts the patient to attempt to remove them. Repeated epistaxis should arouse suspicion of a perforating ulcer. An annoying symptom observed in some small perforations is respiratory whistling. This is seen in some small anterior perforations.

#### TREATMENT

Hays<sup>2</sup> states that if they cause no symptoms perforations are better left alone. At the best they are hard to relieve. Whistling sounds may be relieved by enlarging the perforation anteriorly. Dr. Goldestein has suggested and successfully used a plastic flap of mucus membrane which is dissected, turned into the opening, inserted and sutured between the elevated membranes of the two sides of the septum. Syphilis should of course be treated by the administration of the usual remedies for this disease. Retrograde changes, scabs and crusts may be relieved by cleansing, antiseptic washes and ointments. The denuded areas may be painted with 4 per cent silver nitrate. Ichthyol in 25 percent solution has been recommended.

#### REPORT OF A CASE

A young man 24 years of age came into my office upon the request of his wife and stated that he was having difficulty in getting air through his nose. He complained of some slight pain at times, and scabs and crusts forming in his nose. The chief complaint was from his wife who noticed an odor which was annoying to her. Examination disclosed the anterior nares low down on each side almost completely blocked by a dirty, foul smelling crust which appeared to be in about the same position on each side of the cartilaginous portion.

I grasped one side of the mass with a nasal forceps and much to my surprise the whole mass came away, even the portion on the opposite side, leaving a nice clean round hole in the cartilage of the septum. Upon cleansing the crusts and debris from the object removed it proved to be a piece of wood from the limb of a tree; this piece measured approximately one and a half inches by one fourth inch in thickness, and was hard and in a very good state of preservation.

The young man then remembered that about six years previously, while riding a horse chasing a cow through the woods near Claremore, Oklahoma, the horse run under the limb of a tree, and he was struck on the nose by the limb. He had a nose bleed that evening and some slight bleeding for a few days afterwards but never at any time had felt the need of consulting a physician about his condition until his wife brought him in to see me.

#### REFERENCES

1. Ballenger, Diseases of the Nose, Throat and Ear.
2. Hays, Diseases of the Ear, Nose and Throat.

#### INFANTILE TETANY\*

W. M. TAYLOR, M.D.  
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Having recently had four cases on the newborn service in the O. B. department at St. Anthony's Hospital, and one case at six weeks of age, following operation for pyloric-stenosis, presenting a syndrome closely resembling tetany, it has seemed to me that this opportunity for close observation might offer something of more than passing interest in the study of a condition of which there has been recently, considerable discussion among the pediatricists, *namely*, tetany during first few days of life.

While infantile tetany has been defined as a condition in which there is a hyper-excitability of the nervous system to various stimuli, due to a disturbance of calcium metabolism, usually occurring between the fourth and twenty-fourth month of life, it seems that this complex may be clinically demonstrated in the newborn.

Murry Bass and Karelitz—Section Diseases of Children, A. M. A., 1931, "Tetany and Vomiting in First Days of Life," mention hyperpyrexia, vomiting and carpo-pedal spasm being present in all their cases reported and suggests that these might properly be included under the clinical name of tetany. Ray Shannon in 1929 and 1931, refers to tetany syndrome in which he mentions tetany with generalized edema and cerebral compression in the newborn, and remarks on the promptness with which his cases cleared up under the calcium chloride and parathyroid extract therapy, as did Bass' cases following the administration of calcium gluconate intravenously. His (Shannon) suggestion that there is also a cerebral edema giving rise to some of the nervous manifestations seems very plausible and is to me a point well worth bearing in mind as we have all seen cases in which we felt justified in making a diagnosis of meningeal hemorrhage and to our surprise find the child recovers with no evidence of spastic paralysis as an aftermath, as noted in cases No. 3 and 4 of this report.

Case No. 1. L. L. T., white male born St. Anthony's Hospital, January 12, 1926, was seen by me through courtesy of Dr. E. P. Allen. Low forcep delivery. Fourth day general convulsive seizures, no edema. Convulsions prolonged and repeated. Dyspnea marked. Carpo-pedal spasms.

\*Read before State Pediatric Society, Tulsa, Oklahoma, May, 1932.

Laryngospasm, no fever, no edema noted. Treatment: chloral and bromides as sedative. Symptoms subsiding within ten days. This child is now living at sixth year, is normal mentally, though of the hypertonic type. Normal physical-ly.

Case No. 2.—G. Allen T. White male born St. Anthony's Hospital, June 17, 1930, four years later, and the brother of case No. 1. Normal delivery. Convulsions second day, repeated to the number of six. No fever, no edema. Relieved by chloral and bromides. Left hospital on seventh day. Following history to the effect he is normal in every way, no evidence of spasmophilia at present age of two and one-half years.

Regarding a possible etiological factor in these two cases one may consider the condition and diet of the mother. She never ate vegetables while carrying the first baby (Case No. 1), had persistent vomiting for six months to such a degree she was taken to the hospital with suggestion it might be necessary to interrupt pregnancy. During second pregnancy had less nausea. What supervision of her diet had to do with it is not definite, only suggestive of the influence of metabolic disturbances of the mother on the infant.

Case No. 3.—D. J. J. Girl, born October 11, 1931, at St. Anthony's Hospital was seen at request of Dr. J. F. Kuhn. Low forcep delivery, full term. Breathed without effort at resuscitation. Cried great deal first twenty-four hours. Second twenty-four hours became hypertonic, cyanotic at frequent intervals and with a generalized edema. To rule out birth injury, lumbar puncture was done and examination of fluid yielded no evidence of hemorrhage or irritative lesion of meninges. Nervous symptoms; general muscular spasms, carpo-pedal spasm and cried as if in pain. Schvostek's sign present to the degree that the entire head would respond with the spasm of facial muscles. Jarring crib sufficient to bring on contraction of arms and legs from which there was no complete relaxation. Cerebral symptoms; cyanosis was present with each seizure. There was vomiting of projectile type.

Treatment: Parathyroid extract Collip,  $\frac{1}{2}$  c.c. intramuscularly and repeated in twenty-four hours. Calcium chloride grains  $2\frac{1}{2}$  every four hours as soon as vomiting ceased and was continued while in hospital. Nothing being retained by mouth normal saline was given intraperitoneally, 150 c.c. every twelve hours, three injections. Convulsions ceased after twenty-four hours, at which time the edema was much less. Third day formula was taken from bottle and retained. Baby discharged end of second week, taking breast and complemental feedings. General condition fairly good. This baby at seven months, weighed sixteen pounds, physically normal and no evidence of any neurological disturbances present.

Case No. 4.—G. H. K. White male, seen by courtesy of Dr. Dick Lowry, February 26, 1932. Two weeks premature, delivery by cesarian section. Mother suffering from fulminating type of eclampsia. Baby was pink on delivery but later became cyanotic and was resuscitated with difficulty. Given one ampule of metrolol and 1-1000 grain of atropin. Artificial respiration and oxy-

gen. Jar of crib would bring on contraction of arms and legs. Baby was hypertonic and became spastic on handling. Facial nerve and neck reflex being very positive. Same day at 6:00 P. M., became very cyanotic and seemed in extremis but responded to adrenalin, caffeine and oxygen after prolonged effort. Vomiting persistent and projectile. Baby became very edematous over face and neck within twenty-four hours, eyes closed. Intracranial injury was obviously not to be considered, the infant having been delivered by cesarian section and no lumbar puncture was done.

Treatment. Parathormone  $\frac{1}{2}$  c.c. repeated in twelve hours. Edema gradually disappeared. Convulsions and vomiting ceased and lactic acid formula was taken. Left hospital at end of seven days. Calcium chloride grains  $2\frac{1}{2}$  three times daily. This baby now at three months, is gaining and shows no ill effects from the illness other than congenital cataract. The association of congenital cataract and tetany has been referred to by oculists.

Case No. 5.—This case was reported by me in Oklahoma State Journal, May, 1931, and is not strictly of the newborn period though perhaps the etiology is the same. On the sixth week following vomiting from pyloric stenosis and operation for relief of same, my conclusion was that the attack of tetany was produced by an alkalosis. This promptly subsided following sedative treatment and calcium given by mouth.

Shannon mentions particularly the association of generalized edema and symptoms of cerebral compression which were present in two of his cases. Bass and Karelitz noted specially the association of vomiting, hyperpyrexia and abdominal distention. The hyperpyrexia was not noted in my cases. Shannon reported one case of death from cerebral compression which came to autopsy. In Kehrer's cases edema was a prominent symptom and responded to calcium therapy. While it is true the calcium content of the blood serum was not determined in these cases it has been claimed on rather substantial evidence that the estimate should be a qualitative one rather than quantitative one.

Cases 1 and 2 reported were infants of same mother and with the exception of showing no edema had corresponding clinical manifestations of cases 3 and 4 which briefly were:

1. Schvostek's facial nerve reflex.
2. Carpo-pedal spasm.
3. Generalized board like edema over body and closure of eyes.
4. Persistent vomiting.
5. Normal temperature.

Cases 3 and 4 responded promptly to the administration of parathyroid extract



and calcium therapy, as was suggested by Shannon. It seems plausible that we were here dealing with a calcium metabolism disturbance which produces the tetany syndrome and that by supplying calcium in some available form the condition is corrected, though of calcium metabolism and calcium therapy, even today much of our knowledge as to calcium is imperfect and incomplete, even in the minds of those whose researches have qualified them to speak with authority. It seems interesting to note that the mother of cases 1 and 2 was ill and lost much weight from nausea and vomiting for the first six months of pregnancy. The mother of case 4 was delivered during an eclamptic seizure. Or to summarize, have reported four cases manifesting the tetany syndrome, two of which were treated only by sedatives and liberal amounts of fluids (normal saline subcutaneously and intraperitoneally) no calcium being given, both recovered but more slowly than with calcium therapy. Two cases in which parathyroid extract and calcium chloride were employed recovered immediately. It seems possible that many cases of suspected birth injury in which complete and unexpected recovery followed, may fall in this group of cases.

1. Bass and Karelitz—Tetany Accompanied by Hyperpyrexia and Vomiting in First Days of Life. *Jr. A. M. A.*, Nov. 7, 1931.

2. Shannon, W. R.—Generalized Edema in Association with Tetany of the New-Born. Sept., 1929. P. 549. *Archives of Pediatrics*.

3. Shannon, W. R.—Tetany, Generalized Edema and Cerebral Compression in the New-Born. *Archives of Pediatrics*, March, 1931. P. 153.

4. Kehrer—As quoted by Shannon.

5. Taylor, W. M.—Gastric Tetany. *Oklahoma State Medical Journal*, May, 1931.

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#### ACUTE APLASTIC ANEMIA COMPLICATING ARSPHENAMINE THERAPY: REPORT OF CASE TREATED FOR SYPHILIS COINCIDENT WITH TUBERCULOSIS

I. D. Bronfin and Isidor Singerman, Denver (*Journal A. M. A.*, May 14, 1932), report that in a case of acute arsenical aplastic anemia, terminating fatally in twenty-two days, treatment was primarily for pulmonary tuberculosis, but a syphilitic infection apparently retarded recovery. The history of a cutaneous rash during a previous course of arsphenamine treatments gave the patient and the authors a sense of false security. The inescapable conclusion is that a patient under arsphenamine medication should have frequent examinations, even in the absence of any untoward manifestations, and the drug should be immediately discontinued as soon as such symptoms as malaise, pallor, itching of the skin and purpuric manifestations are noted.

#### EYE GROUNDS IN EVERYDAY PRACTICE\*

A. C. McFARLING, M.D.  
SHAWNEE

In the year 1851, there was born a child, who was in later year destined to become the world's most widely known and quoted authority on ophthalmology — Ernest Fuchs.

It was in this same year, we are told, that Helmholtz was one day handling a small mirror, when, quite by accident a ray of sunlight was projected across the street, through a window, into a room in which a number of persons were engaged in some such domestic occupation as sewing. By slight manipulation of the mirror, he found that all parts of the room could be seen in fairly accurate detail. Aware of the fact that he had been unable to see into the room without the aid of the mirror, and sensing the potential application of the principle thus revealed as an aid in studying the interior of the eye, the inventive genius of this great mind was intrigued into a series of experiments, which resulted in the production of the ophthalmoscope.

In four score years which have elapsed since the advent of ophthalmoscopy a great deal of information has been gathered and volumes have been written upon the retinal changes which are peculiar to diseases of the eye, as well as those retinal changes whose proper interpretation may lead the clinician to diagnostic safety, in certain cases otherwise shrouded in obscurity.

It is not the purpose of this paper to recount the many things which although of vital interest, are matters of routine and are therefore common knowledge to every ophthalmologist. But in the hope of provoking a liberal discussion of the subject, whereby may be discovered some observations of interest which are possibly not as yet of common knowledge, I shall invite your attention to a brief consideration of certain fundus changes observed in the following obscure cases which were later proven to be neurosyphilis.

Case No. 1. Male, age 35, came seeking a pair of glasses for the cure of a headache, which had troubled him for several weeks and which persisted in spite of all previous medical treatment. Dynamic refraction of the eyes revealed however that glasses were not indicated, since the vision,

\*Read before Annual Session Oklahoma State Medical Association, Tulsa, May 24-26, 1932.

monocular and binocular, was normal. There was no muscular insufficiency or imbalance. Pupillary reaction to light, sluggish, consensual reaction normal. Ophthalmoscopic examination revealed a noticeable thickening of nasal half of optic disc, which was bilateral. Fundus otherwise normal in appearance, media clear and tension normal. Blood Wassermann negative. Lumbar puncture yielded a spinal fluid, which was clear, with slightly increased tension. Wassermann decidedly positive.

Case No. 2. Male, age about 40. Industrial worker met with an accident while on duty in which, in addition to various contusions of the soft parts, he sustained a wrenched back. X-ray showed no broken bones, but the man was unable to work and was put to bed. After some weeks of invalidism, during which he was under competent medical attention, he was still unable to return to work on account of the pain and soreness in the back. Although he did not appear to be a very sick man, there was no evidence of malingering and a consultation was called, and in the course of examination which followed, ophthalmoscopic study of the fundus revealed a thickening of the nasal half of the optic disc of each eye, and there was also observed impairment of the pupillary reaction to light. Spinal puncture was advised and following results observed. Spinal fluid clear; tension slightly increased; Wassermann positive; blood Wassermann was negative.

Recommendations for lumbar puncture in each of the foregoing cases were predicated upon changes in the fundus, *namely*, thickening of the nasal half of optic disc. This condition may be satisfactorily accounted for in like manner as the changes which are responsible for papilloedema or choked disc, with the difference that in the above mentioned cases the histological changes are much milder in degree.

This very mild degree of oedema may, however, lead to some confusion because of the fact that the nasal half of the normal disc is of unsharp outline. It will be remembered at this point, however, that of all the fibers from the nerve head to reach the macular region, that only about thirty percent of them emerge from the temporal side of the disc to pass directly to the macula. While the remaining seventy percent emerge from the nasal side of the disc and must therefore bend upon themselves in order to reach the macular region. This anatomical arrangement of the fibers not only accounts for the unsharp outline of the edge of the normal disc on the nasal side, but renders slight degrees of oedema noticeable on the nasal side long before the appearance of that degree of swelling classically known as "choked disc."

Whether or not this fundus change can be demonstrated in all cases of neuro-

syphilis, the writer does not undertake to say, however, he has observed it in a number of additional cases, but after carefully searching the literature no reference could be found touching upon this particular point.

In closing, we should be mindful of the fact that when intracranial tension is pathologically increased to the point of producing choked disc, the diagnosis will have been, in many cases, already deducible from the clinical symptoms. It therefore behooves us as ophthalmologists to point the way to an earlier diagnosis when possible.

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#### SUICIDE: POSSIBILITIES OF PREVENTION BY EARLY RECOGNITION OF SOME DANGER SIGNALS

Ruth E. Fairbank, Baltimore (Journal A. M. A., May 14, 1932), states that the only possible cure of suicide is prevention. She enumerates some of the guide-posts one can use in this connection thus: 1. Most suicides occur in patients who are depressed but suicide is also relatively frequent in schizophrenic and paranoid patients, especially those whose conversation reveals depression. 2. Disappointment over some situation which seems unmodifiable to the rigid individual is perhaps the most common motive in suicide. A common feature in cases studied by the author is the talk of hopelessness, of wanting to die, of a fear of "going crazy"; such expressions as "a feeling of emptiness," of "guilt," or the special preoccupation with various delusions of persecution and with autistic fantasy. 3. The "rigid personality" is present in about one-third of the cases and shows the need of careful watching. 4. A family history of suicide is apt to reduce the resistance. 5. Methods show the things from which patients need to be protected. In the hospital the impulsive plungers are especially difficult to take care of. On the outside, suicides from gas, gun-shot wounds and drowning are frequent. 6. Warnings are to be found in previous attempts and the frequent talk of suicide. Some patients, however, give no warning; others apparently try to protect themselves, while a third group conceal the means of suicide. 7. Special problems involve such questions as when to put a patient on suicidal observation and when to take him off, and how much risk to take in order to encourage an interest in occupation or to avoid unnecessary chafing against restrictions. The methods to be adopted must in the end rest with the personnel in charge, depending to a large extent on the rapport with the patient and the willingness of the family to share the responsibility which such a risk involves. 8. Finally, regarding prevention, the author suggests the restriction of the loose handling of firearms, poisons and sedatives, if possible, and urges the cultivation of a sensitiveness to the aforementioned symptoms, warnings and mistakes. It is necessary to realize that a suicidal patient must never be left alone.



## SOME ASPECTS IN THE ETIOLOGY AND TREATMENT OF ACUTE AND CHRONIC GLAUCOMA

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Glaucoma may be a physical, mechanical, vascular, biological, or chemical problem, or a combination of some or all of these.

It may be a general disease or a local disease but when we are face to face with it, it is a mechanical problem and must be met by mechanical means. It is a problem of relief of pressure, and this relief has been given only by local drugs—which act mechanically, and operative treatment which also acts mechanically.

In some instances it may have been assisted by general treatment, but I have never yet seen a case of glaucoma cured by general treatment. We should therefore become well acquainted with all the mechanical means at our disposal for the relief of this condition. Quoting from my first paper on iridotomy in 1920\* the mechanical means may be summarized as follows:

### 1. *Iridectomy.* Theories as to how it helps.

- (a) Drainage through the canal of Schlemm by exposing a large area by iridectomy well out to the attachment of the iris, or
- (b) On the theory that the cut edge of the iris allows the aqueous to filter into it and thereby comes into closer contact with the capillaries and may be taken up by the blood stream and thus help the damaged or inefficient filtering angle.

In the attempt to explain the undoubted benefit which iridectomy, without a filtering scar sometimes gives, these two principles are the only important ones advanced up to the present time. I shall endeavor to prove later that they are not the chief ways in which iridectomy without a filtering scar, gives relief.

\*Archives of Ophthalmology, Vol. xlix., No. 2, 1920.

### 2. *Filtration and Fistulization.*

The failure of many iridectomies led some surgeons to seek purposely drainage through the sclera into the sub-conjunc-

tival spaces, either (1) through iridectomy with filtering scar; (2) sclerotomy; or (3) both combined, or (4) with seton, by (5) sclerectomy alone or combined with iridectomy, buttonhole or complete, and (6) by including the iris in the wound (iridotaxis and irido-cleisis). It is unnecessary to enumerate the various operations which have the principle of drainage through the sclera in view.

Drainage into the subchoroidal spaces posteriorly by puncture of the sclera in the ciliary region, and freeing the ciliary body with a spatula to connect the anterior chamber with the subchoroidal space or any other form cyclodialyses to serve the same purpose. These operations relieve the intraocular pressure in many cases. They are designed to increase the output of fluid and thus keep the pressure down. In 1924 I published a method by operation, which had for its principle the lessening of the inflow of fluid by sub-conjunctival cautery over the ciliary body. It gives permanent results in about 35% of cases tried. It has been used only in absolute glaucoma with pain to save the eye ball.

It is unnecessary for one to point out that all of these procedures are attended with grave dangers, nor are they, even when successfully performed the proper ones to select in all cases. No one is justified in taking a greater risk when a lesser one may be successful, especially if the lesser one will not add to the danger of relieving the pressure by a more radical operation later in case of failure. The operation of iridotomy is this lesser risk.

The experiments which I have been carrying on for 15 years differ from all others in the fact that there is an attempt to drain from the posterior into the anterior chamber. It is not only a difference in procedure, but a difference in principle, and therefore, if successful, in a small percentage of cases on account of its cosmetic results and its simplicity, it is a distinct addition to our treatment of some types of chronic and acute glaucoma.

(Archives of Ophthalmology, Vol. liv., No. 4, 1925).

Normally the aqueous passes through the pupil from the posterior to the anterior chamber but it is here contended that in some types of glaucoma this passage is impeded on account of the iris clinging closely to the lens over too great a surface extent. Some of the aqueous gets through with difficulty while some passes back forcing the lens and the iris still more

forward. This also happens in some cases of intumescent cataracts with glaucoma which, when a hole is made in the periphery of the iris fall back, at the same time there is a fall of intraocular pressure. If we carefully observe the lens through an ordinary iridectomy or the peripheral iridectomy in a sclerectomy operation we find the iris hugging the lens to almost the extreme periphery. This observation must be made when the anterior chamber fills and has remained normal for several weeks as the lens always comes forward immediately after the operation and remains so for some days or even weeks. It will be seen that at this time the filtering bleb becomes more circumscribed and more localized, so that at times it would be impossible to demonstrate that there was much if any filtration from the bleb to the rest of the subconjunctival tissue and it partakes of the nature of a small staphyloma, no doubt capable of distending during temporary increase of intraocular pressure. If an examination of the contour of the iris is made in some types of unoperated glaucoma one cannot fail to see that the bulging of the iris corresponds with the anterior surface of the lens, and this too, can be followed far out towards the periphery, excepting in some eyes in which the cornea is very small, and in these it takes but little to impede the flow of the aqueous through the pupil as in the eyes of negroes. At times the movement of the iris to light can be seen to be impeded by the lens, and the amount of surface extent hugging the lens can be determined. The movement of the iris and its apparent bulging should be observed carefully and compared with that of normal eyes. In the study of this phase iridectomies done as a preliminary to cataract operations furnish much instruction. In these, too, some weeks should elapse after the iridectomy before we can get accurate data because the anterior chamber should, as in the cases above mentioned, become normal, or nearly so in depth. It will be observed that in these eyes of normal intraocular pressure, the pillars of the coloboma do not rest on the lens, and but barely touch it only near the pupillary border. Of course, we are not now considering intumescent cataracts. The iris in these cases lie on the lens closely adapted over a greater surface extent than in certain types of senile cataracts, and this is why we have a tendency to glaucoma in such cases. All these observations are made on living eyes much better than in

pathological specimens, which are always altered in preparation either by shrinkage of the tissues or displacement of the structures, and can be verified from the practice of most ophthalmic surgeons. With these considerations in view it appears to me that a better communication between the anterior and posterior chamber would help, in selected cases of glaucoma.

In September of 1916, I had what I took to be a suitable case for giving a better communication from the posterior to the anterior chamber. It was one of acute attack in chronic glaucoma. This iris and the lens were almost filling the anterior chamber and much of the periphery was apparently, though not, adherent to the back of the cornea. I made an incision of the cornea and iris together at the periphery with a cataract knife, taking care not to injure the lens, with the result of a permanent fall of intraocular pressure, which has persisted ever since, and the patient has 20-30 vision which would probably be 20-20 but for some corneal nebulae. There were some adhesions of the iris at the pupillary border which I could not demonstrate all around the pupil. There was no iris bombe. The other eye had been operated on by iridectomy some years previously with equal success by another surgeon. In this eye there was no filtering scar, and the iridectomy, of course, gave drainage into the anterior chamber as well as any other good effects it may have had.

Following this I did six selected cases each of which had one eye very far advanced and the other with between 20-30 and 20-20 vision. In the very advanced eye I sought to obtain drainage by complete iridectomy, avoiding filtering scar, always leaving an area in which I could do a sclerectomy should this fail, without the objectionable feature of having to dissect through the sclerotomy scar to split the cornea. In the better eye I made a five or six-millimeter incision on the scleral side of the cornea-scleral junction, and inserted the iris forceps, or hook, drew out the periphery of the iris and cut a small piece off, making a small peripheral iridectomy which always appeared triangular in shape when replaced. All except two of the complete iridectomies were perfectly successful in reducing intraocular pressure to normal. These two reduced it to such extent as to bring vision up, in one case from 20-100 to 20-50, and in the other from hand movements to 20-200. The hand movements were



past the fixation point on the temporal field; the peripheral iridectomy in the six cases reduced the intraocular pressure to normal without exception, and the anterior chamber always became, and remained, deeper than in the complete iridectomies. The last of these was done in October, 1918, and the intraocular pressure has remained normal, and the vision and field undiminished to this time, and there seems no likelihood of a change. It is easy to replace the iris in peripheral iridectomies, and they heal without a filtering scar.

These operations of peripheral iridectomy were an improvement on any I have known except the development to be described in this paper, which I consider the simplest and safest of all operations for some types of early chronic glaucoma including acute attacks and for some later stages of this disease. It is especially good in acute attacks at any stage.

At first the experiments were done in all kinds of acute and chronic glaucoma not selected on account of a shallow anterior chamber with bulging iris. It soon became apparent that we must select our cases and classify them in order to learn which patient is likely to be benefited by the operation because many of them were not helped and many helped only for a short time. Since the success seemed to depend on the type of the eye it appeared better to classify on an anatomical basis that I mentioned in my paper of 1920\*.

I observed that most cases fell into the following types which on account of their importance in selecting cases for iridotomy, I shall re-state a little more fully.

\*Archives of Ophthalmology, Vol. xlix., No. 2, 1920.

#### TYPE I

The first type of glaucoma with which this paper is concerned is that which is often encountered in the negro race, in which we find the chief characteristics to be small cornea, moderately shallow anterior chamber, and thick iris which does not show much of the contour of the crystalline lens, on account of the small diameter of the cornea. This type is not entirely suitable for iridotomy except as a preliminary to later operation.

*Comment.* Here we have a lens of somewhat the usual size, which approaches closer to the ciliary body than in those with the larger cornea and reduces the size of the posterior chamber. The iris is thicker and firmer and lying on a broad

area of the lens, causes a difficulty of flow through the pupil. It requires only slight pushing forward to dam up the filtering angle which is in itself, on account of the smaller diameter of the cornea, reduced in length by about 3 to 6 mm. or more, and reduced in angle on account of the plane of the iris being at a lesser angle with the cornea, which factors must be taken into account if there is an increase of intra-ocular fluid at any period. Such eyes usually increase very much in intra-ocular pressure before there is any great further shallowing of the anterior chamber. While the iris has greater body and is able to resist pushing forward, yet on account of its thickness it takes very little to obstruct flow into the anterior chamber through the pupil because of the smaller angle made by the iris and the cornea, and also very little moving forward to obstruct the filtering angle; and for the foregoing special qualities it should be put into a special anatomic class.

If we take into consideration its anatomic features it would impress itself on us as a class which takes but little to disturb the balance between the production of aqueous and the exit from the eye on account of these mechanical features. Among this class of cases we must expect to find some which will not be given complete relief by drainage into the anterior chamber even if there is not an increased production of fluid, and some which will return to high tension if anything should occur to produce an extra amount of aqueous. At best the margin of safety is small. Iridotomy gives relief for a month to a year or two but finally a more radical operation must be done.

#### TYPE II

In the second type of glaucoma we find a deep or a normal anterior chamber, and a normal or a large cornea. The iris is not usually thin. There may be a poor response to eserine, but not always in such cases.

*Comment.* Probably the chief mechanical cause here is not a lack of drainage through the pupil, but a congenital limitation of the entrance of the canal of Schlemm or even a small canal leaving an exit capable of dealing with a normal production of aqueous, but incapable of dealing with any increased production or later normal rise and fall. In these cases, even when far advanced, there is little decrease in the depth of the anterior chamber. The margin of safety here is small and sub-

choroidal or drainage through the sclera is indicated. Iridotomy gives very temporary relief suitable in preparation for a more radical operation.

#### TYPE III

In the third type of glaucoma, we find a small or normal cornea with a shallow anterior chamber, and an iris with small nodular enlargements or a network of iris tissue attached far out in the cornea from the limbus of a congenital nature (faulty development of iris and anterior chamber) which is thick and crowding the filtering angle even with the pupil contracted. The iris, however, does not bulge forward very much nor show the contour of the lens to any great extent. If there is any forward movement it is obscured by the peculiar formation of the iris at its attachment. Eserin in the earlier stages brings down the pressure very well, so that it would seem that the entrance of the canal of Schlemm is in good order, and its capacity to take up the fluid not impaired if the base of the iris could be thinned out as with a myotic, in order to open up the angle. One chief mechanical trouble here is the thick base of the iris with the small angle. Here the margin of safety is small and an iridotomy gives but temporary relief. In this type it is useful only as a preparation for a sclerectomy, etc.

#### TYPE IV

In the fourth type of glaucoma, we find a marked bulging forward of the iris with the contour of the lens well shown; a shallow anterior chamber usually with a thin iris. The majority of these cases are in blue or gray eyes. The cornea may vary in size.

*Comment.* In the earlier stages they react well to myotics; but, later, owing to adhesions of the iris over the pectinate ligaments or to the back of the periphery of the cornea, or adhesions of the iris to the anterior capsule of the lens caused by the prolonged use of myotics they react but poorly or not at all to eserine.

When a good peripheral iridotomy is done in this type it is beautiful to see the anterior chamber deepen on the operating table, whether it is an early case without peripheral adhesions, or an older one. This is the most suitable type for peripheral iridotomy.

#### CONGESTIVE AND NON-CONGESTIVE GLAUCOMA

I have not attempted to differentiate

between congestive and non-congestive glaucoma. It would appear that their relationship is purely anatomical. If there is a sudden rise of intraocular pressure there will be so-called congestive signs and symptoms. Intraocular pressure in every normal eye varies during the day, and on certain occasions which I need not mention. An eye well balanced in structure can take care of these variations in the production of intraocular fluid which regulates the pressure. In some eyes the increase of pressure may be so gradual that there may be no signs of congestion, even though the pressure reaches an extremely high point and blindness ensues. Again, a normal, or moderately high, intraocular pressure may go without congestive symptoms until it produces blindness on account of the weak structure of the lamina cribrosa, yet both of the above conditions are likely to produce congestive symptoms at any time if there is a sudden rise of pressure.

Nearly all of the so-called non-congestive glaucomata are of type I, II and III on account of their anatomical structure. Very rarely do we find a non-congestive one among type IV cases. The difference between congestive and non-congestive glaucoma is a difference in the structure of the eye, modified, of course, by the nervous stability of the patient. The eyes coming under type IV furnish nearly all the congestive and acute cases on account of their structure having certain features, such as the bulging iris closely adapted to the lens. After iridotomy the congestive symptoms disappear and, if the margin for safety in the rise and fall of the production of intraocular fluid is not great enough at the filtering angle, it may appear later as a non-congestive glaucoma. Thus, with an alternation in structure by operation, the congestive type is turned into the non-congestive type.

#### THE OPERATION

The patient should be under a myotic and the pupil, if possible, well contracted. One hour before the operation 3 grains of amytol is given by mouth, fifteen minutes before the operation 2 drops of a 5% solution of cocaine is instilled for 3 or four times, and three minutes before 8 minims of a 1% solution of cocaine is injected well back under tenon's capsule.

If this is allowed to come too far forward there will be ballooning of the conjunctiva up to the cornea-scleral junction and it makes the operation too difficult.



Having then applied the fixation forceps nearly at the place at which the counter puncture in the cornea is intended, if necessary. The knife is passed through at the cornea-scleral junction. The back of the knife should be toward the pupil with the cutting edge up. The iris is engaged by the point of the knife, 2 m.m. further on and  $1\frac{1}{2}$  m.m. from the periphery which on further pushing forms a little ruck in the iris, rendering the easy performance of a counter-puncture in the iris. The knife is pushed still farther with pressure directed upward, so as to cut through the iris transversal, making a hole about 1 m.m. in size. Sometimes it is necessary to make a counterpuncture in the cornea in order to sever the intervening piece of iris. At times it is found that the first puncture and counter puncture in the iris makes a hole sufficiently large and the knife is withdrawn without a counterpuncture in the cornea. In cases of long standing in which there might be an occlusion of the canal of Schlemm, the knife is directed toward the ligamenta pectinati of the opposite side so that some of these would be cut by the point of the knife with the hope that free drainage into the canal of Schlemm would thus take place. If possible there should be no aqueous lost.

The knife used is a Knapp knife without an obstructing shoulder at the end of the shaft or a Lang's synechia knife. The knife should be kept in full view while passing through the anterior chamber. In acute cases the patient should be warned that there may be a little pain as the knife enters the iris. In all except case VI Me-Lean tonometer was used.

The following case report is a brief follow up of cases of type IV, most of which have been operated on from 10 to 15 years ago.

Case 1—Type IV. Male, 43, presents himself for examination on May 10th, 1920. Right eye painful; great chemosis of conjunctiva and steamy cornea; anterior chamber almost absent. Vision light perception.

He was instructed to remain in the office under treatment until I returned from the hospital in the afternoon. A few weeks later I learned that after approved treatment by another oculist an iridectomy was done, which was immediately followed by an intraocular hemorrhage and the eyeball was removed.

On December 15th, 1920, he again came to my office with the left eye in exactly the same condition. The pain began four days before. An iridectomy was done with scarcely any loss of aqueous. The cornea became clear and from about thirty different places in the iris blood appeared, which soon filled the anterior chamber. This dis-

appeared in four days and he left the hospital two weeks afterwards with a vision of 20-20—four letters. The intraocular pressure was 25 mm. Field reduced to 15 degrees on nasal side. It has varied between 25 mm. and 31 mm. up till last seen on May 29th, 1931. The vision remained 20-20—4 till 1927, when lens changes began which reduced it gradually to 20-100 in 1927. The field of vision is apparently unchanged.

Case 2—Type IV. Male, 55 years. First seen on January 20th, 1920. Left eye completely blind from glaucoma for over four years. Vision failing in the left eye for past three years. At times worse than others. No pain and no rainbow colours about lights. Temporary dimness more frequent lately. Vision 20-20—3 letters. Intraocular pressure 69 reduced to 51 under myotics ( $\frac{1}{4}$  of 1% eserine four times a day for one week). Increasing eserine to six times a day caused no change. Eye very comfortable under myotics. Field below contracted to 5° from the fixation point as shown in plate. Iridotomy operation was done on February 5th, 1920, and the anterior chamber became deeper. The intraocular pressure remained from 31 to 35; the field and the vision unaltered, and the eye comfortable until September, 1930, when the patient went to another state. He was advised to use  $\frac{1}{4}$  of 1% eserine once a week.

In February, 1931, he informed me by letter that his eye was still comfortable and that his oculist finds no difference in vision or field of vision.

Case 3—Type IV. Female, white. Under treatment for glaucoma in both eyes for two years; good response to eserine.

Vision: R. 20-40; L. 20-30.

Field of right eye contracted to 10° in the upper nasal segment quadrant, and to 30° in the temporal side. Field of left eye slightly contracted on the nasal side.

Intraocular pressure: R. 68 mm. of mercury; L. 67 mm. of mercury.

Cornea: 11 mm.

Iris: Blue, and well marking the contour of the lens.

Anterior chamber: Shallow in right eye and less so in left eye.

Pupils: Active when not under eserine, but left more active than right.

The eyes were doing well under  $\frac{1}{4}$  of 1% eserine three times a day.

June 2nd, an acute attack in right eye. A small iridotomy was done. The eye was normal in appearance and the anterior chamber deepened in a remarkable manner two days afterwards, and no further treatment was given the eye. Previous to the operation cocaine instillation would produce an immediate rise of intraocular pressure with pain. Fifteen days afterwards the eye was put under homatropin for one day, with no rise of intraocular pressure. The patient is now using eserine in the left eye, but nothing in the right eye, which is considered well up to this time. On October 1st, 1919, the intraocular pressure was 37 mm. and on December 2nd, 1919, the pressure was 31 mm. The patient has been under homatropin several times since September with no rise of pressure.

On April 15th, 1931, the intraocular pressure

was 31 mm. No eserine was used since the operation. Field unchanged and vision 20-30.

Case 4. The patient came for an operation on the left eye, October 10, 1919. The anterior chamber was very shallow, the iris blue and definitely marking the contour of the lens. Pupil active. The cornea was 11 mm. The eye had been under my care for two years. There was a history of previous congestive attacks. The eye responded well to eserine, 0.25 percent three times a day, and under this treatment had been losing no vision in field or acuity. There was scarcely any cupping of the disk. The vision in this eye was 20-30 with correcting glasses. As it was October 15, 1918, at which time the intraocular pressure was 57 mm., November 15, 1919, a small iridotomy, 1 mm. in length, was done in the upper part of the iris. The anterior chamber began to deepen immediately, and was almost normal fifteen minutes after the operation. It was about normal next day. Since that time repeated observations of the pressure have been made and it has never been found to be above normal. On June 3rd, 1931, vision 20-30. Field unchanged.

Case 5—Type IV. J. S. B., a white man, aged 48, came to my office, September 13, 1919, complaining of troublesome halos around lights at night time and inability to read with vision, which he described as blurring on some days and quite good on others. There was never any pain. Five months before his case had been diagnosed as chronic glaucoma by another oculist. He was under eserine three times a day during the last five months, but still he would at times see the colour rings around the lights at night with the left eye. These were troublesome.

Cornea: 11.5 mm. Iris, blue, thin and bulging forward, making a shallow anterior chamber both eyes. Left pupil oval with the long axis vertical. Both pupils reacted fairly well to light and accommodation. The intraocular pressure felt normal to palpation. Vision: R. 20-20; L. 20-20. The patient was instructed to omit eserine for four days, and at the end of that time the intraocular pressure was: R. 45; L. 86. The colour rings had returned after the first day without the drops. Resumed eserine.

December 13th: After two days without the eserine drops, the intraocular pressure was: R. 45 mm. of mercury; L. 70 mm. The patient was sent to the hospital and a 1 mm. iridotomy was done in the upper periphery of the iris. The eyeball was punctured 1 mm. from the clear edge of the cornea. The physicians present had been asked to observe the shallowness of the anterior chamber before the operation, which was done with practically no loss of aqueous. The changes in the eye were then observed for fifteen minutes after, while he was on the operating table. The chamber gradually deepened and became perfectly normal under observation, but the tension felt, at the end of fifteen minutes, as high as, or higher than before the puncture was made. The wound in the eyeball had evidently been completely closed in that time. Next day the eye felt soft normal, and had not been above 30 mm. of mercury at any time since the operation during the many tests. No treatment was given to this eye since the operation, and there has been no re-appearance of the colour rings up to November, 1929, when the intraocular pressure was 32. Fields unchanged. No local treatment during 10 years.

On January 7th, 1920, the right eye, which

was under a myotic all this time, began to give trouble by frequent blurring and colour rings if the myotic was neglected even once. Intraocular pressure after three days without myotic 56. Field slightly contracted on nasal side. January 15th, iridotomy attempted but no hole in iris could be found. There was a return of the symptoms and again myotics were resorted to. At the end of 5 months these had to be increased to six times a day. On July 12th, 1920, a successful iridotomy was done with complete relief, which lasted till November 6th, 1929. A few days after this date the patient died of cardiac disease.

Case 6—Type IV. Female, aged 72. Seen on June 26th, 1919, at the request of another oculist. Past history not available. Right eye was very painful for five days. There was moderate chemosis of the conjunctiva, steamy cornea, anterior chamber shallow. The pupil was 3 mm. under eserine. The intraocular pressure (Schiötz) was 65 mm.

Vision: Hand movements.

Local anaesthesia failed and the patient was put under chloroform and a small peripheral iridotomy was performed. When seen three weeks later the eye was quiet and the vision was 10-100 without correction. There was no return of symptoms up to the time the patient died four years afterwards.

## CONCLUSION

1. In many cases of chronic glaucoma including acute attacks the chief mechanical factor is lack of proper drainage from the posterior to the anterior chamber on account of the iris being too closely adapted to the lens over a great surface extent thus impeding the flow of aqueous through the pupil and allowing some to permeate the vitreous and help to push the lens and iris forward, making the anterior chamber shallow and partly occluding the filtering angle as a secondary effect. In such cases drainage into the anterior chamber through a peripheral iridotomy restores it and results in relief of pressure.

2. In glaucoma which has persisted for a long time the filtering angle may be permanently or partly occluded and incapable of full restoration. In such cases, in addition to drainage into the anterior chamber, it is necessary to subconjunctival or subchoroidal drainage.

3. Drainage into the anterior chamber may be accomplished by ordinary iridectomy with or without sclerectomy. It also accompanies iridotaxis and iridocleisis, but is better accomplished with a small peripheral iridectomy and still better with a small peripheral iridotomy, as described in this paper.

4. A small peripheral iridotomy should be the operation of election in all cases of



chronic primary glaucoma, including acute attacks in the course of the disease, on account of its safety from intraocular hemorrhages, and because of the fact that it puts the eye in better condition for a subconjunctival or subchoroidal drainage if found to be necessary afterward. It does not alter the appearance of the eye and the patient readily consents to an early operation.

5. If an eye which has been under very high intraocular pressure for a long period has been reduced by operation 20 or 30 mm. of mercury and still is 10 or 15 mm. above normal and has improved in vision and in field or remained the same, it is questionable whether it is justifiable to submit the patient to another operation in order to bring intraocular pressure to normal; for the nerve fibres which have withstood the higher intraocular pressure are capable of functioning indefinitely under the lower intraocular pressure. The eye should be under close observation.

6. The permanency of the results can be judged better by a perusal of the reported cases, in this paper, which were done from 10 to 15 years ago. Type IV gives the best results both in reduction of pressure and permanency. We still have to remember that even with the best results all glaucomatous eyes should be under constant and competent observation for the rest of the patient's life.

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#### SPINAL ANESTHESIA

F. G. Lindemulder, Ann Arbor, Mich. (Journal A. M. A., July 16, 1932), describes the clinical changes that occur during and following spinal anesthesia and some of the sequelae and complications. He also reports two cases in which death occurred several days following the anesthesia. It appeared that the anesthesia was a contributing cause for the deaths. The permanent effects of the drug were seen at necropsy. In one case, the spinal cord was noted to be normal in the cervical region, and in the lower dorsal and lumbar regions definite pathologic changes were noted. It has been said by several observers that there is no irritation in the nervous system following the injection of procaine or its allied drugs and they compare this finding with irritation produced by the inhalation method on the mucous membranes of the bronchi and lungs. However, the author feels that there is a definite toxic effect on the spinal cord and the spinal nerve roots, which shows its effect both clinically and pathologically, the patients usually complaining of pain, and this finding can be explained by the pathologic study of the nerve roots.

#### CISTERN PUNCTURE IN NEUROSYPHILIS

J. F. CAMPBELL, M.D.  
MUSKOGEE

The cistern puncture although originally recommended for therapeutic purposes has rapidly become increasingly more popular as a diagnostic procedure. This has come about mainly because the intraspinal route of medication for neurosyphilis has not proven the boon to humanity which was to be hoped for, and in only some types of the disease is it indicated. Since it is always necessary to make the diagnosis before we can choose our treatment, my discussion is from this phase only.

Those suffering from syphilis are, generally speaking, those individuals who can only devote a small portion of their time during the week from their daily duties for treatment, and not jeopardize their positions or jobs by devoting from twenty-four hours to a week in a hospital or at their homes to eliminate or diagnose neurosyphilis. And because it is generally agreed that any physician who discharges a patient who has been under treatment as cured without first checking the spinal fluid, is neglecting his duty to his patient, it behooves us to find a method of removing this fluid for diagnosis in the simplest way without causing the patient undue discomfort and undue loss of time. Because the cistern puncture possesses just such advantages over the lumbar route of approach, I have chosen to recommend this method as the method of choice for the diagnosis of neurosyphilis as an office procedure.

Scientifically speaking, the cistern puncture is a relatively new procedure but practically it is older than many other operative and diagnostic methods.

Obregia, in reporting 22 cervical punctures to the Rumanian Biological Society, is credited with performing the first cistern punctures in 1908. Because little publicity was attached to his article it was not until 1919, that Ayres and his associates described their method of obtaining spinal fluid from the cisterna magna, thinking that they were the first to use this method. In 1923, Eskuchen, working independently of Ayres and unacquainted with his work, described his indirect method of puncture. Since that time the different methods have been used by vari-

ous investigators, and one noteworthy modification has been made by Morris Lyons, who reports 679 punctures performed at the New York Post Graduate without any bad results. The various methods will be described in detail later.

In a collection of 10,000 cisterna punctures which have been published, there have been only 7 bad results, 5 of which were attributed to inexperience. In 1915, Schoenbeck collected 71 sudden deaths due to lumbar puncture which may in part be due to the little understood technical difficulties at that time. Now the lumbar puncture is an everyday procedure in every doctor's office. It is my opinion that the cistern puncture will have the same distinctive popularity in a few years.

#### INDICATIONS FOR USE OF THE CISTERN PUNCTURE

The cistern puncture may be used anywhere that the lumbar puncture can be used with some exceptions, which will be mentioned later. The patient who comes in for a routine examination can have a cistern performed in line with the other indicated tests, and thus not leave anything for conjecture in the diagnosis. Every patient who has ever had syphilis, whether treated or untreated should have the benefit of serological examination of the spinal fluid, because of the large percentage of tertiary cases which have a neuro-spinal involvement. A check should also be made at frequent intervals during treatment of C. N. S. cases in order to judge his response to medication.

Much has been written about the cistern puncture in treatment of neurosyphilis. It has been recommended as an avenue of treatment of arsphenaminized serum, or the introduction of a solution of mercury bichloride, and for the use of small amounts of arsphenamine. It has been a long known fact that simple drainage has a certain therapeutic response. Severe headaches often disappear after the first cistern puncture. A method of treatment which has given gratifying results in my hands is a method wherein a treatment of either silver salvarsan or of tryparsamid is given and in thirty minutes the cistern is performed and from 20 to 30 cubic centimeters of fluid withdrawn. These treatments are repeated at weekly intervals for about six treatments and after a rest of four weeks the course may be repeated. A recent paper by Morris Lyons of New York, also reports good results by this method. Whether the im-

provement is from medication drawn into the spinal fluid, or from the drainage, is still a matter of controversy.

#### OFFICE TECHNIQUE

The cisterna magna is a funnel shaped extension of the narrow posterior subarachnoid space and lies between the cerebellum and the medulla oblongata. This reservoir has an average depth of  $1\frac{1}{2}$  cm. and is at a distance of  $2\frac{1}{2}$  to 8 cm. from the surface of the neck. This cisterna magna then is situated superior to and on a level with the rim of the posterior portion of the foramen magnum, extending from the level of the axis upward. The foramen magnum has two small tubercles on each side across which stretches the transverse ligament. The aperture anterior to this holds the odontoid process of the axis, while the posterior aperture holds the cord, its meninges and the inferior portion of the fourth ventricle. The fourth ventricle is a diamond-shaped space about  $\frac{1}{3}$  to  $\frac{1}{2}$ " high. It communicates above with the 3rd ventricle and below with the central canal. It also communicates with the subarachnoid space through the foramina of Lushle and Magendie.

In making the puncture the point of the needle traverses the following tissues in order: skin, superficial fascia, ligamentum nuchae, deep fascia, areolar tissue, occipitoatlanto ligament, dura mater and arachnoid. The space through which the puncture is made is bounded laterally by the trapezoid muscle, the complexus and the rectus capitis posterior minor. The roof is formed by the occipital bone and the floor is part of the ligamentum nuchae, posterior spine of the axis and part of posterior arch of the atlas.

As in the lumbar puncture, the position of the patient is as important as the technical procedure. The position I find best adapted to office procedure is a horizontal one in which the patient is placed on his right side for a right handed technician and on his left side for a left handed technician. The head is placed on specially constructed blocks to bring the cervical spine on exactly a horizontal plane. The shoulders are placed at right angles with his arms in front of him. The face is turned so that the patient is looking directly forward, because any deviation of the head will cause disproportion of the land marks.

The neck is aseptically prepared, some



of the hair clipped, if too long, and a specially designed triangular drape covering the head, which has an aperture for the passage of the needle. Sterile towels and sheets cover the shoulders and body. The operator wears gloves. Three land marks are followed: *namely*, the spine of the second cervical vertebra, the external auditory canal, and the glabella. It has been found that a section through these points will go through the cisterna magna.

Under novocaine anesthesia, and with the head in acute flexion, the needle is inserted through the skin midway between the spine of the second cervical vertebra and the occiput in midline. From here the techniques differ. By the Ayres' method the needle is directed along the line described, and when the resistance of the dura is encountered, the stylet is withdrawn. By the method of Estuken, the tip of the needle is directed upward to the base of the occiput, and when this is encountered, the stylet is withdrawn. The tip of the needle is then slanted downward along the base of the occiput to slide into the cisterna. The needle is held back when sliding into the cistern because of the danger of plunging into the medulla. By a newer method described by Morris Lyons, the needle is slanted upward after piercing the skin on a line directed one inch above the glabella. After the needle has traversed 2.5 cm. the stillette is withdrawn, and by gentle upward pressure on the handle the tip is made to slide into the cisterna magna.

When the cistern is reached, cerebrospinal fluid escapes from the free end of the needle. Only occasionally is it necessary to aspirate. The amount of fluid withdrawn may be anywhere from five to thirty cubic centimeters of fluid without untoward symptoms, although this varies with the different patients. When the requisite amount of fluid is drawn the needle may be withdrawn and the puncture site painted with collodion. The patient is then put in the upright position and in a few minutes is free to go.

One of the greatest assets of the cisterna punctura is the freedom from symptoms and the almost total absence of headache. When the needle pierces the dura the patient often complains of slight lightning like pains on one side of the head, or a tingling or anesthesia in one of the extremities. Infrequently a patient will complain of a severe headache for a few hours after the puncture. There will be a stiffness of the neck for a few

days but this is never enough to incapacitate the patient.

Of 50 punctures performed by the author on 41 patients, 30 were on patients either clinically diagnosed syphilis, or on patients who had been treated for syphilis. Of this number, 14 were found to have serologically positive cerebro-spinal fluids, 6 of the 14 had negative blood Wassermann's and positive spinal Wassermann's after a year or more of treatment. Eight of the 14 with positive blood and spinal fluid were advanced cases that fell into one of three classes:

1. Those unaware of the disease.
2. Those who had received insufficient early treatment.
3. Those who were Wassermann fast.

The contraindications of the cistern puncture are in cases of extreme age and extreme youth; any deformity in the region of the upper cervical vertebra and greatly increased blood pressure. In extreme age the dura is so friable that it may not promptly close, so that any hemorrhage of veins in that region may empty into the cistern through the puncture wound. In one of my cases—a woman over sixty years old—this occurred, so that my spinal fluid obtained was quite bloody. After twenty-four hours of rest in bed however, her condition had returned to normal.

The advantages of cistern puncture are many:

1. Freedom from after-symptoms. Because the cistern freely communicates with the 3rd ventricles and lateral ventricles where the fluid is secreted, and because a decrease in this fluid causes a decrease in the size of the brain, there are very few of the prolonged headaches that we see with lumbar puncture. In my cases there was not a single case which suffered any discomfort except a slight headache for a few hours after the puncture was done. Many claimed that they could not tell anything had been done.

2. Essentially an office procedure. All of my cases except one were done in the office and allowed to go home immediately. The one case was a hospital case which was already in bed. Because of the anatomical location of the cistern it is better for them to be put in the upright position as soon as the puncture is made.

3. The serological results and cell count are the same as in the lumbar region. In

our series of cases the serology and cell counts compared favorably with those done in the lumbar region.

4. In diagnosis of cord block, in meningitis and tumor of the spinal cord, the method gives a means of diagnosis never had before.

#### SUMMARY

Cistern puncture is described as a relatively safe office procedure in the diagnosis and elimination of neurosyphilis. Freedom from symptoms and time economy are considered as valuable to the doctor as to the patient. Fifty-two punctures are reported with an incidence of fourteen serologically positive spinal fluids in thirty selected cases.

The recommendation of this method of diagnosis is only on the condition that the operator have a certain amount of adequate training, either under some competent teacher or on a cadaver, because as in other highly technical methods, theoretical dangers and all contraindications must be closely observed.

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#### INEXPERT REFRACTION

John Green, Jr., and Carl Beisbarth, St. Louis (Journal A. M. A., July 9, 1932) have discussed with many colleagues their attitude toward eye testing. Is the task enjoyable or irksome? They have observed so far as possible, the methods employed by other men; they have tried to determine whether the older men have modified their methods of objective and subjective examination in the light of recent advances in technic; they have scrutinized their own methods and from time to time have made modifications, some of which have served as checks on prior methods and have been retained. As a result of these inquiries and observations, they have reached certain conclusions which seem to offer an explanation for some of the inexpert refraction that, from time to time, comes to the attention of every ophthalmologist. They present the following five reasons for inexpert refraction: 1. There is the ophthalmologist who is "not interested in refraction." If ophthalmology has any attraction for him, it lies in diagnosis, therapeutics and operations. 2. Some ophthalmologists have so many "irons in the fire" that they have "no time for refraction." The demands of teaching, the pursuit of original research, the writing of papers, the attendance at engagements outside of professional life and the exigencies of private and consultative practice (which may include otorhinolaryngology) render it physically impossible to "do refraction" (there simply are not enough hours in the day). Therefore this part of the practice is delegated to a medical assistant. 3. The attitude that "the game is not worth the candle" is held by some ophthalmologists. 4. Some men practicing in smaller communities have stated that they feel themselves in direct competition with optometrists. To maintain their

standing with patients they think they are compelled to "speed up" the work of refraction, to adopt short cuts, to get the patient through in a day, in a word, to lower the quality of the work to optometric levels. Such a practice seems to us sheer folly, and its continuance constitutes a betrayal of professional integrity. By method and practice the ophthalmologist should secure the most accurate measurements, and it is a matter of no moment whether his result is attained in one day or ten. If the ophthalmologist is going to fall to optometric levels, he is doing far more than optometric propaganda could ever do to perpetuate in the public mind the utter confusion that now prevails. 5. Much inexact refraction emanates from eye clinics. Many of the clinics are undermanned, and the number of patients demanding refraction exceeds the number that can be tested accurately, so the policy of "roughing it out and letting it go at that" prevails. Happily, this criticism does not hold for some clinics in which the technical equipment is of the best and one or more men, skilled in refraction are paid for doing expert work. The authors emphasize that the beginner in ophthalmology should adhere strictly to the teachings and practices of the art and science of refraction laid down by our ophthalmologic masters. Such a course may not in the beginning bring to him a large clientele, but in the long run he will secure the confidence of the public, or at least, that part of the public that is sufficiently discriminating. In the meantime, he will have the consciousness of having done his work with precision and thus upheld the highest ideals of professional practice.

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#### CONTROL OF AN OUTBREAK OF SCARLET FEVER

Maurice L. Blatt and Maurice L. Dale, Chicago (Journal A. M. A., April 23, 1932), call attention to the fact that numerous preventive measures, including isolation of the patient and disinfection of skin, throat, clothing, utensils and rooms, have been unsuccessful in the control of scarlet fever outbreaks. Failure may be attributed to ignorance of the etiologic factor and of the epidemiology of the disease. In recent years, knowledge of the pathogenesis of scarlet fever has progressed through advances in bacteriologic and immunologic research. Without closing St. Vincent's Infant and Maternity Hospital, an institution with an annual turnover of 300 per cent, it was possible to stop an outbreak of scarlet fever while the incidence was still high outside the institution. Taking cultures of throats, masking the adult hemolytic streptococcus carriers, isolating the infants with positive throat cultures and using an antiseptic in the nose and throat of those harboring hemolytic organisms, making Dick tests of all individuals, passively immunizing Dick positive contacts, and activity immunizing all Dick positive patients were the measures employed. Dick toxin for active immunization produced severe reactions in many older children and adults. As a result of using the technic for active immunization recommended by the Dicks, positive Dick tests became negative one month after the last injection, with one exception, and that one after the sixth. Three infants under 3 months of age, one of whom was 2 weeks old, gave a positive Dick test. They were not immunized and did not develop scarlet fever. In this small series, mutations in skin reactivity to the Dick toxin occurred within six months.



# THE JOURNAL

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### EDITORIAL

#### THE PROGRESS OF CANCER RESEARCH AND TREATMENT IN THE PAST SEVENTEEN YEARS

Doctor Joseph Colt Bloodgood, has recently issued a lengthy statement covering various phases of cancer work since 1915. In a letter accompanying the statement he makes the following statement: "In regard to cancer,—in view of the fact that its earliest stages in the skin, mouth, and cervix are curable by the proper application of small amounts of radium, all agencies must unite in seeing that properly trained radiologists are supplied to

every clinic using these small amounts of radium."

Doctor Bloodgood notes that in 1915, when he was asked to address the Academy of Medicine in San Francisco on cancer research activities throughout the world, there were so few cancer research workers that it was no trouble to write almost every one of them and go over the chief literature of their experimental work. The following is especially noted among the various stages and activities occurring in 1915. Cancer throughout the world was largely a disease which could be recognized clinically and from its gross pathology. In spite of the great advances made in the microscopic study of the cellular pathology of tumors since Muller, Virchow, and Cohnheim, the microscope was not often used in the operating room to make a diagnosis from frozen section. In all the operating rooms of the best clinics throughout the world the clinical and gross diagnosis of the operating surgeon was checked with the microscope in the pathological laboratory, and this material is still available for restudy and has been and is being restudied in a large number of clinics. At that time a small number of the medical profession had begun to appreciate the possible value of X-rays and radium in the treatment of cancer. In 1913 the American Society for the Control of Cancer was organized, but Bloodgood believes it is safe to say that the principles of the surgical treatment of cancer were pretty well established by 1895, thirty-seven years ago; deep X-ray and radium treatment between 1915 and 1920. The education of the public has been more or less continuous for almost nineteen years, therefore we have activities in pathology, in operations, in X-ray diagnosis and treatment, in radium and in education.

Bloodgood notes that less attention has been devoted in time, money, efforts and the daily personal thoughts and actions of the physician and dentist, and in the co-operative effort of all those agencies which have helped, and are helping the medical profession in the primary schools, and this is more important for prevention and cure than all other agencies. The activities in France, in England and in other foreign countries are practically similar to those going on in the United States. He doubts if any one in the United States dies of cancer without the benefit of surgeon, X-rays, or radium, but that the majority are not cured, many not even temporarily

relieved because of the lateness of the stage of the disease when the patient sought advice. He has personally studied thousands of histories of patients who sought the advice of the medical profession after they had been warned for some time; he noted the striking fact in those patients, whose malignant disease can be diagnosed clinically, that they have not had a recent diagnostic survey, and the chief cause of delay after they become aware of their symptoms has been ignorance rather than fear.

He concludes that what we need today, in every civilized country, is not so much more radium, or more cancer clinics, but more cases of cancer of the cervix in its early stages; that the majority of obstetricians and gynecologists of today believe that the greatest protection against cancer of the cervix is routine pelvic examinations after the birth of a child. He finds that in this country less than ten per cent of our mothers are so protected.

It is gratifying that he notes that cancer has remained well twenty or more years when the disease involved the skin, lips, oral cavity, larynx, breast, stomach, colon, and malignant tumors of bone and soft parts, this of course in the presence of proper treatment.

One of the chief obstacles to a greater progress today is the feeling among many members of the medical profession in all its departments, that the growth of the health departments—Federal, State, City and County—is really interfering with the practice of medicine in the following ways: Actually curtailing the activities of the medical profession and diminishing their income and influence. In the very few contacts I have made with the general practitioner in the small villages of England, I encountered the same point of view.

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#### SOME PHASES OF FRACTURE WORK AND MALPRACTICE ALLEGATIONS.

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We believe that practically all physicians should keep constantly in mind certain phases incident to fracture work, certain rather fixed rules, which if neglected, forgotten or overlooked, will surely in the end spell trouble of varying degree. We refer to the handling of fractures.

As a rule, most states require a practitioner to possess that degree of care and skill which a physician in the same or a

similar locality would ordinarily exercise in the treatment of the same or similar condition. The moral to this is: if you are not positively certain of your ground—and there are many unsuspected pitfalls—call a consultant, and call one that is able to give you aid. Call no one merely because he happens to be a good, clever, "talky" fellow, but call one who knows the most about fractures in that particular locality.

It should be remembered, that, as a rule, a fracture, after proper reduction is easy, or nearly so. With that in view, and the patient complaining of excessive pain, beware and search for the cause and correct it if possible—in fact it must be corrected, regardless of the amount of trouble caused the physician.

X-rays, and a sufficiency of them are so essential, that often the mere failure to have them made, is liable to result in a verdict charging malpractice. Certain special fractures call for several pictures, and at certain times. They should be made in two positions, for often perfect alignment in one view will show an impossibility in the other view.

Readjustment of splints, pulleys, cord, and position must be as frequent as is necessary to maintain the proper position.

Occasionally a bad result may be anticipated immediately when the case is first seen. In such instances, and this does not necessarily apply to fractures, it will be well to frankly so state to those concerned, and it might be better still to make the statement in writing, in duplicate, stating the reasons, retain a copy, and be prepared for possible future unpleasant eventualities.

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#### SHOULD VETERANS' BUREAU WORK BE FURTHER DECENTRALIZED

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For a long time after the World war there was naturally great complaint that the government was taking too much time to render aid to those entitled to aid. At that time only service connected disabilities were considered. Since then the bars have been let down and the Veterans' Administration, under direction of the law, undertakes to render aid to all types of ex-soldiers without reference to when or how the disabilities were received—this with some slight exceptions. Perhaps one of the most puzzling decisions of the legal department was that permitting, not only treatment, but disability allowance to



those invalidated due to using poisonous Jamaica ginger. The decision, it is said was based on the fact, not that the man used the material for its alcoholic content and effect, but as a medicine, and became poisoned as a result.

There has been a great deal of criticism of the bureau from time to time over various of its decisions and activities, and a great deal of this criticism comes from the medical profession. One of the uppermost thoughts of many medical men, not only in the bureau itself, but outside, is that the director should be a medical man, rather than a layman, looking only at the business aspects of the matter. Certainly the bulk of the hard work is done by the hundreds of physicians scattered over the country in various hospitals, regional offices, the central office and the diagnostic centers. Naturally a layman has little or no conception of the amount and gravity of this work. On the other hand any averagely equipped business man is capable of interpreting and carrying out the demands made by law as to the business aspects of the work.

To the writer, however, it seems that the most helpful thing, the most economical to the government, a time-saver to the beneficiary of the bureau would be to send him, in most cases to the nearest hospital or competent clinic for examination and necessary treatment. Instancing the unnecessary expense and avoidable loss to the government the reader's attention is called to a hypothetical case made up, a case which has often occurred. Railway fare, pullman, meals, going and returning, say from Corpus Christi Texas to the Muskogee hospital, amount to a fraction over one hundred dollars—this does not contemplate the cost of caring for the man while in the hospital, which may vary from the minimum of a week (this is rare) to a much longer time. No discrimination is made as to cases. If the man has the simplest condition, hemorrhoids, tonsillitis, the routing and handling is just as expensive as if he had a gastric ulcer or some other condition, which we know will be prolonged and troublesome as to treatment. It seems to the writer that the work of the Veterans' Administration could be further decentralized to the end that the man will be saved time and money as well as the government. The simplest cases should be handled in Corpus Christi by local men. These same local men care for the wives, mothers, brothers and relatives of the

bureau beneficiary efficiently and rapidly. They have no long wait for a hospital bed. no expensive trip, prolonged hospitalization and similar irritating conditions to deal with; they simply see the doctor, get a diagnosis, the indicated treatment, and go about their business. The writer recalls one instance in which a consulting surgeon performs a tonsillectomy at the Veterans' Hospital, the man is sent to bed, observed for several days, and finally discharged with a railway and pullman ticket, plus the necessary orders for meals to last to his home. The same consulting surgeon goes to his office, and aside from a coagulation test and Wassermann, as preliminary, he performs the tonsillectomy *in the office*, the man is observed for a time, then sent home by taxi or his own car. We are unable to see why so much trouble and expense should be engendered simply because the government is behind the case, the practicability and efficiency of the officials causing this condition must be subject to questioning. It seems that some practical means could be worked out by which those cases ordinarily known to be of probable short duration, could be handled in entirety in Corpus Christi. Speaking for Oklahoma, we can see no reason for sending the ordinary and average case from a town like, Mangum, Clinton, Woodward, Alva, Enid, Durant, McAlester, Vinita, Pawhuska, Blackwell and many others, not necessary to mention, to Muskogee, to be held an indeterminate length of time, finally operated for a triviality, then sent home. All over Texas and Oklahoma, and the other states comprising what is known as District 14, we know there are highly competent and efficient physicians and surgeons, and it seems to us that some form of arrangement could be made by which many of the men now sent on long and expensive trips for hospitalization for at least the simpler things, could not be given the same service at home, with more satisfaction to the men and vastly less expense to the government.

#### THE "TRUE" ECLECTIC PHYSICIAN

An editorial bordering upon the comic is noted in the National Eclectic Medical Association Quarterly, March, 1932. Under the caption "What is a True Eclectic Physician," the editor undertakes to answer, and, it will be only necessary to quote in part, one small, paragraph to give one an idea of the "covered wagon," "double-

bitted axe" age in which the remaining few eclectics live in order to appreciate the far-behindness of the entire mass.

"Freedom of thought, freedom of investigation are absolutely indispensable to the true eclectic physician. Mental despotism cannot be tolerated—hence the decisions of certain councils as to the acceptance of remedies, or the rejection of remedies by anybody cannot be accepted by a true eclectic physician. The eclectic physician does his own investigating of all remedies."

No doubt the allusion to "certain councils," refers to the Council on Pharmacy and Chemistry of the A. M. A., and, it is to laugh, to compare, for instance the investigations, conclusions and decisions of some poorly qualified eclectic physician to those of the eminent and super able committee composing the A. M. A. Council. This council is composed of men from the faculties of great universities and schools, yet its opinion must not be accepted unless some poor, biased man, unfitted from the very start to scientifically study the complexities of drugs, their actions, reactions and results, agrees that the decision is a correct one. The writer recalls that in approximately 25 years, or since its existence the decisions of this council has stood the fiery test of time. Many men, some in good faith, others obviously with an ulterior motive, have undertaken to overthrow their decisions. It is not recalled that a single victory has followed their attacks—on the contrary scores of frauds, rascalities and impossibilities have been unearthed, and the physician and public thereby protected. Often prolonged and highly technical investigation was necessary in order to arrive at the truth, but in the end the right prevailed. For one, we feel a sense of dependence upon our council and will continue to do so. Of course, there is no objection to any individual studying any problem of materia medica, but it will be seen at a glance that he is very poorly equipped to perform that function.

### *Editorial Notes—Personal and General*

DR. JAS. L. SHULER, Durant, is reported improving after a severe illness.

DR. C. N. BERRY and family, Oklahoma City, spent the month of August in California.

DR. G. E. STANBRO, announces the opening of his offices, 1215 Medical Arts Building, Oklahoma City.

DR. R. Q. ATCHLEY, Tulsa, will attend the clinics of Dr. Willis Campbell at Memphis, during September.

DR. EARL D. McBRIDE and family, Oklahoma City, spent the latter part of August at Cottonwood Lake, Colorado.

DR. JOEL T. WOODBURN, Parsons, Kansas, and formerly of St. Louis, has located in Muskogee, and is associated with Dr. F. W. Ewing.

DR. HALSELL FITE, Muskogee, spent the months of August and September at Lake Belletaine, Minnesota, at the family summer home.

DR. SAMUEL R. CUNNINGHAM, Oklahoma City, attended the meeting of the American Orthopedic Association in Spokane in July. He gave three lectures, one on "Fractures of the Lower Elbow," "Vertebral Injuries," and "Fractures of the Lower Extremities."

PREGNANCY, we have heretofore noted, was due to only one cause, but Dr. M. O. Shivers, Colorado Springs, (Page 343, Journal, Oklahoma State Medical Association, August, 1932) states: "Many have noted that the administration of thyroid extract and iodine in some form to sterile women has resulted in pregnancy." This will naturally place the name of the Coloradean in the hall of fame.

ADAIR COUNTY PHYSICIANS ably entertained visiting physicians at Watts on the Illinois river, August 3rd. A most substantial meal consisting of a fish fry, corn on the cob, and in other styles, salads, etc., coffee and desert, made up a splendid dinner. After dinner a program was rendered as follows:

Veterans Administration—Dr. L. H. Webb, Medical Officer in Charge, U. S. Veterans' Hospital, Muskogee.

Anesthesia—Dr. C. A. Thompson, Muskogee.

Pediatrics—Dr. C. E. White, Muskogee.

Urology—Dr. S. D. Neely, Muskogee.

The bulk of the heavy work fell upon Dr. I. W. Rogers of Watts.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION, held a meeting at Durant, June 23rd. The following program was given:

Invocation—Rev. C. A. Denny, Pastor First Christian Church, Durant.

Welcome Address—Dr. H. B. Fuston, Bokchito.

Response to Welcome Address—Dr. R. C. Huckaby, Valliant.

Public Health and Taxation—Dr. Chas. M. Pearce, McAlester.

Diabetes From the Standpoint of the General Practitioner—Dr. C. D. Strother, Sherman, Texas.

The Leukocyte Count as a Criterion in the Diagnosis and Prognosis of Certain Infectious Diseases—Dr. J. M. Thuringer, Oklahoma City.

Sarcoma of the Eye with Case Reports—Dr. L. C. Kuyrkendall, McAlester.

Diagnosis of Brain Tumors and the Present Day Method of Treatment—Dr. Harry Wilkins, Oklahoma City.

Hypertension—Dr. B. B. Coker, Durant.



AUTOMOBILE DEATHS seem to be affected by the depression. One wonders if there are not some good features to the depression on reading that in Oklahoma City in 1930, there were seventy-six deaths, while in 1931 there were only fifty-five. In 1930 there were fifty deaths in Tulsa, and in 1931 there were only thirty-three. We say give us more of that kind of "depression."

Oklahoma City annually, under auspices of the Kiwanis club, stages a "safety first" demonstration, composed of many floats in a parade, in order to call attention to the dangers of automobile driving, accidents, etc.

According to Associated Press figures two hundred forty-five people were killed July 4th, in the United States. The figures do not include those fatally injured, and who died later. While this summary shows a great improvement over the past year, it should be improved upon. There were 119 motor vehicle deaths, 90 due to drowning, 10 fireworks fatalities, and 26 from other causes. Six youths in Butte, Montana, were blown to shreds when they ignited a case of dynamite to celebrate the 4th.

#### DOCTOR RANSOM T. CASTLEBERRY

Doctor R. T. Castleberry, pioneer physician of Ada, died July, 1932. He was born in Georgia in 1856, and has practiced medicine in Pontotoc County for thirty-five years.

Burial was in Rosedale Cemetery, Ada.

#### THE END OF TWO MEN

The following story by C. W. Richards, as told by Irving S. Cobb over the radio on Friday, April 1, 1932.

This morning I saw the name of a man in the papers whom I knew, when he was alive and on earth, as well possibly as any man knew him. He had very few friends or associates. A few years ago he died and many columns were written in the papers throughout the country about his death. The only thing they had to tell about him was that he had piled up and left forty million cold dollars. When he went out, there was no one who was sorry he was gone. There was nobody to weep at his grave. There was not a man, woman, or child who shed a tear over his going. In this life he had done nothing for anyone else. His chief aim and purpose was to pile up and amass forty million cold dollars. The only reason his name appeared this morning was that there was notice of some form of court action to quiet title in a piece of property which he left.

I want to contrast his life with that of an old time doctor who lived in a very small community in the west.

If he were measured by the amount of money he left, he would be considered a complete failure because he did not leave a red cent. But, he lived and practiced his profession in this little community for forty years. His patients were not among the rich or the socially elite in the

community but his patients were among the poor. the down-trodden, the drunkard, the scarlet woman of the street, and those who had nothing to pay for his services.

He maintained a little office on the street of this village until his own resources had been exhausted and he had to quit his little office on the street and take a room up over the village livery stable—dark, dirty, and dingy. He had no money with which to pay a sign painter to paint a sign for him, so he took a rough pine board and some paint and, in his own crude way, he scrawled on the board, "Dr. Thomas Riley, his office is upstairs now." He took this pine board with this crude sign and nailed it to the hitching post to the livery stable. He went about his ministry of mercy day by day.

Nobody paid him any attention much, until finally one day he had been missing for two or three days and the curiosity of the people of the community became aroused and they climbed up that old, rickety, dusty, ditty, stairway to his room. When they reached there, they found it locked. They battered the old door down and there they found that head, with its tousled white hair, resting on a wrinkled pillow and his hands crossed across his breast. Two nights before he had driven the old spavined mare to the sulky, through the sleet and the snow, twenty miles up in the mountains to administer to someone who was suffering up there. On his way back he had contracted pneumonia and had gone out there, alone, in that old, dingy room without the ministry of any hand whatever.

They prepared an old pine box in which to bury him. They placed it on a cheal hearse and bore it to the cemetery. There was no great formal procession of carriages to follow his body to the grave, but there was a great company of the poor, the outcast, and the drunkards who followed his body to its last resting place, and they were genuine mourners. On the way to the cemetery, they gathered some frostbitten grasses and the last of the wild flowers and some of the old leaves, and they carried them to his grave as their floral tribute to him.

When they returned from his funeral, they sold the old spavined mare and sulky to pay his funeral expenses. Some of those he had helped while he was alive and who loved him for what he had done for them, wanted to erect a monument or a rock slab at his grave. They went into his room and got his account book, took it out and opened it up and, possibly with the last spark of intelligence and with the last feeble bit of energy left in his body, he had written opposite each account, "Paid in full."

Then the village drunkard, sober for once, had a bright idea. So he went one night, took up that hitching post with his sign on it, carried it out to the cemetery and erected it at the head of his grave and there it stood until the sleet and the snow and the cold of the winter and the rain and the sunshine and the wind of the summer had worn away the last vestige of the paint from that old board. It read, "Dr. Thomas Riley, his office is upstairs now," and I am not sure but what it is.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## INTERNAL MEDICINE

Edited by  
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**A Report of Six Cases of Flaxseed Sensitization with Review of the Literature.** Grant, Lucile Ruffe. *The Journal of Allergy*, July, 1932. Page 469.

Flaxseed is an exceedingly irritating substance to those who become sensitive to it, and it can cause asthma or gastrointestinal symptoms from inhalation of particles of the substance or from its ingestion.

The sensitization of this substance is often very marked, and the reaction violent.

In all the cases reported, the sensitization was to flaxseed itself, not linseed oil, linen, or substances made from flax fiber, although cases sensitive to the latter may exist.

Cases sensitive to flaxseed usually show good results if the material can be completely removed from the patient's environment; if this is not possible, good results may be obtained by careful desensitization.

The skin irritation of the workers in the flaxseed crushers of the linseed oil mills is, in almost all cases, a very mild condition. The trauma to the skin from rubbing it with rough substances, like burlap, and the heat probably are also important etiologic factors. None of the patients are described as complaining of other allergic manifestations, and the condition is so universal that I doubt whether it can be described as allergic.

**The Effect of Injection of Nonspecific Protein On The Pain of Ulcer and on Gastric Secretion: A Clinical and Experimental Study.** Vanzant, Frances R., Snell, Albert M. *The Journal of Clinical Investigation*, July, 1932. Page 647.

In dogs the intravenous injection of foreign protein produces first a brief lowering in the amount and acidity of the gastric juice and then a more prolonged rise in the activity of the secretory mechanism.

Section of the vagus or splanchnic nerves did not materially influence the response of the gastric glands to injections of foreign protein except for the fact that immediately after bilateral vagotomy the secondary increase in secretion was abolished.

In cases of ulcer, the injection of foreign protein was frequently followed by a gratifying reduction in the amount of pain and distress. This clinical improvement was not associated with any consistent lowering of gastric acidity and there was no correlation between the degree of acidity found at any one time and the amount of pain complained of. There was some indication in the patients of the presence of the same biphasic swing in secretion that was found in dogs.

There was some evidence to indicate that more lasting relief of symptoms can be expected in those cases in which the secretion is reduced after treatment.

Only three of the seventeen patients treated obtained relief which lasted for some time, while four had temporary relief. Four of the patients experienced such brief periods of relief and the febrile reactions were so unpleasant that it did not seem advisable to continue the treatment. The condition of the ulcer of three patients grew worse during the period of treatment and observation, although all of these obtained some symptomatic relief. The symptoms of the remaining three patients were aggravated by the treatment.

The clinical and experimental data here presented have left them with the impression that injections of foreign protein are not likely to be of much value in the treatment of peptic ulcer except in occasional cases. The discomfort entailed did not justify the results obtained.

They had no exact information which would warrant making guesses as to the mechanism which in some cases produces prompt relief of pain and discomfort.

**The Effect of Liver Therapy On The Neurologic Manifestations of Pernicious Anemia.** Baker, Benjamin M., Jr., Longcope, Warfield E., and Bordley, James. *The American Journal of The Medical Sciences*, July, 1932. Page 1.

A detailed report on the changes in the nervous system of 44 cases of pernicious anemia affected by liver and liver extract, 39 of which showed signs and symptoms of definite involvement of the nervous system. They emphasize the fact that large amounts of liver must be consumed over long periods of time before great improvement can be elicited. In practically a third of the cases treated for less than six months, improvement was noted; in more than half, the signs and symptoms were improved in the cases treated for more than six months. In practically 60 per cent of the cases in which there was an advanced subacute combined degeneration who were treated for more than ten months, there was marked improvement. The symptoms and signs that improved most noticeably were referable to disturbances of cutaneous and muscular sensibility, and to flaccid pareses.

It is suggested that some of these symptoms and signs may be dependent upon changes in the peripheral nerves. It is to be emphasized that to secure this improvement large amounts of liver or liver extract should be used over long periods of time.

**Treatment of Lobar Pneumonia By Felton's Serum.** Cowan, John, Harrington, A. W., Cruickshank, R. Cuthbertson D. P., and Fleming, John. *Lancet* London, July 2, 1932, Volume 223, Page 8.

The paper is based on a study of 155 cases of lobar pneumonia, 137 of which were treated with



Felton's serum. The cases were observed during 1930 and 1931. During this observation it is to be noted that only eighteen cases were used as controls.

Among the 44 treated cases of type I pneumonia, two deaths occurred; of 45 cases of type II pneumonia eight deaths occurred. There were five deaths among the six type III pneumonia cases treated. There were four deaths resulting from 37 cases of type X. Five cases were not typed and one of these died.

The most striking observation is "The mortality of type II infections has been little if at all effected."

Note: From the author's observation one would conclude that Felton's serum is of no benefit in type II pneumonia but it is not in keeping with the observation of those who have used Felton's serum here in America. This work is to be criticized because the cases in which serum was used did not alternate numerically with an equal number of control cases. Baldwin of the Cornell Division of the New York Hospital, in a carefully controlled observation showed that the mortality rate in serum treated cases of type I pneumonia was only 5 per cent versus a 25 per cent death rate in the control group; and in the serum treated cases of type II, a mortality of only 28.5 per cent versus a 51.7 per cent death rate in the group deprived of the benefit of serum.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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**Painful Stumps After Amputation (Les Douleurs des Moignons D' Amputation), By Rene Leriche, La Presse Medicale, June 1, 1932.**

All who are interested in the original and important work of Leriche and his associates on the "surgery of pain" will find in this article much "food for thought."

Vigorous attention is called to the pitiable lot of a class of unfortunate whose sufferings are so extreme that they are entirely incapacitated; and there is a no less vigorous indictment of the medical profession for the light and careless and usually utterly worthless service rendered such sufferers.

The phenomena after amputation are considered under several headings. I shall take them up in the order employed by the author and shall give a brief summary in each case of his arguments and conclusions.

1. Normal Phenomenon: The Illusion of the Presence of an Amputated Member (Le Phenomene Normal: L' Illusion de Presence du Membre Ampute). This illusion is present in practically all cases of amputation. It is explained on physiological grounds. There are atrophic changes in all the tissues of the stump, with the exception of the nerves. The nerve makes an effort to advance, but is hindered. As a result, there is proliferation and piling up of the neurilemma, these masses involving the axis cylinders. The centripetal axis cylinders (sensory nerves) remain always excitable, and continue to conduct to the centers in the brain the sensations that they receive. After amputation they continue to

carry their excitations to their habitual centers. The result is that the patient who has had an amputation of a member always feels the presence of it. When the principal nerves of the stump are infiltrated with a solution of novocain the patient does not feel the presence of the amputated member. This would seem to be proof that the phenomenon is not of psychic origin. It has a physiological and anatomical basis, and is regarded as being a normal phenomenon.

2. Pathologic Phenomenon: Painful Illusions of the Absent Member (Le Phenomene Pathologique: L' Illusion Douloureuse du Membre Absent). Unfortunately, there are many patients whose troubles do not stop with the sense of the presence of the amputated member, but have, in addition the sense of pain in it. This may be explained by the fact that repair is not accompanied by the same phenomena in all individuals, regardless of whether the operation has been an amputation or some other surgical procedure.

In the case of the patient who has had an amputation, and who progresses in a normal way, there is constant sensation of the presence of the amputated member, but without pain; in this case (painful illusions) there is the same sensation of presence, but with pain—sensations of burning, stabbing, distortion, pulling. The pathology is the same; the same physiological functions are involved. Painful phenomena after aseptic amputations as well as after infections. The pain that follows is an expression of individual peculiarity. The cerebral interpretation is identical but to a stronger excitation the brain responds with painful sensations.

In such a case, inject the nerve involved with novocain and the pain is temporarily relieved.

Excise the over-developed nerve tissue in the stump (neuroma), and the pain is relieved until another one forms—and there will always be another.

Section the nerve at a distance, and immediately suture the sectioned ends together to avoid a neuroma at this point; the pain often disappears entirely; the neuroma is without nerve connection (le Neurome est enerne).

3. Another Pathologic Phenomenon: Sympathetic (Vaso-motor) Pain of the Stump (Autre Phenomene: La Douleur Sympathique du Moignon).

In this case the neuroma (neurome) is sclerotic, irregular, and encroaches upon neighboring structures. Often the neuroglia invades muscles and connective tissue (comme l' a moutré Nageotte), and thus is created all sorts of incessant excitations which cannot be classified neurologically. These excitations go out by all sorts of centripetal ways and reach the spinal ganglion. Arrived there the excitations may be continued to the brain, but often the most of them are reflected to the periphery by the sympathetic under the form of vaso-motor and trophic phenomena consisting of obscure and ill defined sharp pains that do not correspond to any fixed neurological distribution. The pain is in the stump, and often extends to its root, into gluteal region, or neck, sometimes to opposite side, sometimes to distant areas—and as the physician does not understand, the patient is often regarded as a simulator, an exaggerator, or a drug addict. The pains are not usually violent, but constant, sharp,

grueling, and there is frequently cyanosis of the stump with ulceration.

These phenomena are not of psychic origin.

Inject novocain solution about the neuroma, but not into it. Infiltrate the surrounding structures with novocain. The pains cease for an hour or two. Liberate the neuroma by dissection, but leave it in place. For five or six days there is no pain, then, when the contacts are re-established, the pains re-appear, in aggravated form.

Periarterial sympathectomy is usually followed by durable relief.

Ramisection nearly always gives relief.

4. Another Pathologic Phenomenon: Great and Painful Hyper-Esthesia of the Stump (*Autre Phenomene Pathologique: La Grande Hyperesthesie des Moignons*).

This is illustrated by the history of a patient. In 1920 a young captain asked for a consultation. The chief complaint was extreme diffuse hyperesthesia of the stump of an amputated arm. The arm had been crushed about the elbow by a piece of an exploding shell. It was amputated. A short time later there were pains in the stump. They became worse and worse. About a year and a half after the amputation the pains had taken the predominant type of hyperesthesia which was now so severe that the least touch or the least disturbance from whatever cause produced great agony. Leriche says: "I patiently listened to his history, for the patients who suffer are, contrary to what it thought habitually, patients to listen to with care, if one does not wish to err in the interpretation of their pains. Nearly always it is what they tell you that gives the key to the therapeutic problem."

On being asked to show the stump, the patient begged that it not be examined, notwithstanding he had made a journey of 475 kilometres for the very purpose of having an examination. He was overcome by the immediate dread of the pain. He finally agreed to uncover it provided the sleeves of coat and shirt were jerked off suddenly.

The stump was morphologically perfect. Intense hyperesthesia was the only symptom. No cyanosis, no oedema, no evidence of vaso-motor trouble. The touch of a finger caused great pain, but when the stump was once grasped it could be squeezed brutally without much pain. In putting on shirt and coat the same process of sudden movement was carried out in a reverse way. The sleeve being held open, he thrust the stump into it with striking suddenness. And when it was finished he said: "You see what I have suffered for sixteen months. I cannot bear it longer, and they say that I exaggerate. If you cannot do anything for me I had rather die than continue such a life."

This is happily an exceptional type which Leriche shows is associated with a hyperemia of the meninges of the cord. There is particularly an arachnoiditis. The hyperesthesia is like that seen in meningitis.

In this type, the excitation via the sympathetic system may go to more or less distant areas. Leriche makes the statement that there is no physiological impossibility of its extension to the optic tract.

The pains of stumps which are of various types and appear difficult to classify can be differentiated if one starts with the phenomena

which are present at the level of a sectioned nerve. All the pains are due, in the final account, to the presence of a neuroma normally constituted. If the potential of growth is reduced, the neuroma, frequently called by Leriche "neuroglioma," is but a simple cicatricial layer which causes no trouble except the illusion of the presence of the amputated member. If the potential is great the neuroma is voluminous, with the axis cylinders piled up into balls—"pelotonnees"—on the inside of it, and the intrinsic excitations produce pain.

5. Etiologic Conditions and Clinical Aspect of Painful Stumps (*Conditions Etiologiques et Aspect Clinique des Douleurs des Moignons*).

There is no extrinsic determining etiological factor in connection with painful stumps. They are found after all kinds of amputations: after amputation with aseptic evolution as well as after those which suppurate; after those that have been sutured and those reunited by second intention.

Generally, the pains do not appear at once after operation. They may not appear for several months or several years.

Clinically, there are three types: the type with fixed topography in the absent member, the sympathetic type, and the type with superficial hyperesthesia. The types are sometimes mixed.

In all cases a careful examination will show the presence of one or several neuromata in the stump, but their presence does not indicate what should be the proper treatment. The neuroma is an essential part of the pathology, but it is necessary to analyze the symptoms produced by it in order to determine the kind of treatment.

In one case there is constant pain in the absent member—soreness, burning, pulling. The patient has no truce.

In a second case there is burning, cutting pain in the stump, often in paroxysms. The wearing of an artificial leg is impossible.

In a third case life is torture, and often the end is morphinism or suicide.

Here is an example:

An officer of 30 years had the thigh torn away by a shell, February 23, 1916. Twelve hours after regularization of the stump. In May a new correction of the stump. Almost at once atrocious, burning pain outer border of foot and in the heel. In July, 1916, great sciatic exposed and infiltrated with alcohol by the advice of M. Sicard. Pain worse. In January, 1917, reamputation by M. Gaudier. No relief. In November, 1918, by the advice of M. Claude resection of sciatic. Aggravation, morphinisation. In August, 1920, constant hyperesthesia of thigh, buttock and back. Posterior radicotomy. Slight relief, but persistent violent pain in stump, projected to absent toes. Excision femoral branch small sciatic to relieve it from cicatricial pressure. Temporary partial relief, but quickly terrible pains re-appeared. Two years later the patient killed himself.

C. Treatment of Painful Stumps (*Traitement des Douleurs des Moignons*).

What ought to be done in order to escape such lamentable stories? The procedure must be based upon a minute analysis of each particular case, which may be in connection with a pure neuroma,



a peripheral sympathetic type, or meningo-radi-  
cular type.

On the other hand, it is easy to say what ought  
not be done.

First of all, one ought not to look lightly upon  
the statements of patients who complain of pain  
in their stumps. It is an easy attitude, but it is  
inhuman and antimedical.

An early examination should be made with  
care.

The patient must not be permitted to become a  
morphinomaniac.

Reamputation must not be done.

Do not inject alcohol into the nerves.

Do not use diathermy.

Do not employ radiotherapy.

Do not do a resection of the neuroma, purely  
and simply. Leriche has operated upon 30 pa-  
tients because of pains in the stumps. All of  
them had had neuromata removed. None of them  
was cured.

Here is a history of why these things—the in-  
jection of alcohol into the nerve, the reamputa-  
tion of the stump, the simple excision of the  
neuroma, the employment of radiotherapy, the  
use of diathermy—should not be done:

In January, 1924, Leriche saw a young man  
wounded July, 1916, followed by the amputation  
of the leg the next day; rapid healing. About  
the seventh day lancinating pains like electric  
currents in stump. Reamputation in a hospital  
at Neuilly. No relief. Early in 1917 injection  
of alcohol into nerve by Prof. Roger at Mar-  
seilles. No relief. A little later resection of  
neuromatous sciatic by Prof. Silhol. Failure.  
Then radiotherapy. Failure. Patient does not  
think there was an operation in 1918, but not  
sure. In 1919 disarticulation of the knee. Pains  
not relieved.

In 1920, still at Marseilles, femoral sympathec-  
tomy without result.

In 1921: Amputation of thigh without result.  
Then reamputation. Pains the same—burning at  
end of stump, intolerable superficial hyperes-  
thesia. November, at Lyon, new resection of  
sciatic by M. Durand. Made worse. Tried to  
drown himself in the Rhine but was rescued.  
Sent to Leriche. Posterior radicotomy. Relief  
for about a year. Two years later at Nîmes with  
relapse. Cardotomy by M. Cantaloube. No fur-  
ther knowledge of the unfortunate.

And yet many of these patients can be re-  
lieved if a proper early operation is done. These  
two conditions prevail: early operation; good op-  
eration.

But how to choose?

Do not forget that some of these patients suf-  
fer in the absent member, others in the stump,  
and still others nearly everywhere.

For pain of fixed topography in the stump, a  
high neurotomy with immediate suture of the  
ends of the nerve at point of section may be a  
good procedure.

For the sympathetic (vaso-motor) type, one  
would reasonably think of periarthral sympa-  
thectomy or ramisection.

If the injection of novocain solution into the

nerve entirely relieves the pain for an hour,  
there is a good chance to succeed by neurotomy.  
If such injection does not relieve the pain, infil-  
trate the other nerves of the stump because more  
than one nerve may be involved. If still no re-  
lief, infiltrate the solution along the principal  
artery. If this relieves the pain sympathectomy  
will probably succeed. If none of the procedures  
brings relief, think at once of cordotomy, as the  
next operation.

Examples:

**First Type:** Amputation of thigh. Pain in foot,  
Injection of nerve relieves. Dissect out sciatic  
10 cm. above end of stump, if possible. Section  
nerve. Suture ends together. Inject 1 or 2 c.c.  
phenol into central end. There is good chance of  
success. Do not do simple ablation of neuroma.  
It sometimes relieves, but the chances are it will  
not.

Do not forget that more than one nerve in a  
stump may be affected.

**Second Type:** Amputation of the thigh. Stump  
oedematous, cyanotic, painful, with ulceration. In  
the recent case, periarthral sympathectomy. If  
suspicion of mixed type, neurotomy at the same  
time.

**Late Case:** In the lower extremity, most often  
best to do ramisection or extraperitoneal lumbar  
ganglio-nectomy. A corresponding operation for  
superior extremity. When the pain is not in-  
tense, and when the vaso-motor element predomi-  
nates, periarthral sympathectomy often suffices,  
but in such a case it is better to add neurotomy  
with suture as before described, because the  
types are frequently mixed.

**Third Type:** Great and diffuse coldness of  
stump, with distant radiation, sometimes involv-  
ing opposite side. Here one must not depend  
upon peripheral operations: "their hour has  
passed (leur heure est passée)." One must go  
straight to the cord and do a posterior radicot-  
omy with ablation of the spinal ganglions, or a  
cordotomy. In particularly rebellious cases, Le-  
riche suggests the possibility of excision of the  
sensory centers of the cortex.

The more experience one acquires in the surg-  
ery of pain, the more one sees the obscurities of  
the problem.

Great efforts are still to be made in order to  
avoid failure. It is an aim to pursue. It is worth  
the trouble (De grands efforts sont encore a faire  
pour arriver a ne plus acheuer, C'est un but a  
poursuivre. It en vaut la peine).

—LeRoy Long.

The Foundation of an Endocrine Clinic for the  
Study and Treatment of Amenorrhea, Uter-  
ine Bleeding, and Sterility. Brooke M. An-  
spach, M.D., and Jacob Hoffman, M.D., Phila-  
delphia, Pa. American Journal of Obstetrics  
and Gynecology. Vol. XXIV, No. 1, July, 1932.

A tremendous amount of experimental work  
has been done in the field of endocrinology as  
applied to abnormal menstruation, amenorrhea  
and sterility, and now we are beginning to see  
practical application in treatment of these con-  
ditions in the human being. This is possible be-  
cause of more accurate diagnosis of the actual  
dysfunction and the availability of more potent  
and pure endocrine therapeutic agents.

This article is a very good summary of the

status of this very important field at the present time. While it is not completely comprehensive, it outlines the situation in a good manner. worthy of verbatim repetition because of their

The conclusions which these authors draw are worthy of verbatim repetition because of their fundamental importance.

The anterior pituitary and the follicular hormone tests are important diagnostic aids in estimating ovarian function.

The picture presented by the endometrium, has proved the most important single observation in estimating ovarian function.

The demonstration of anterior pituitary hormone in the blood and urine seems to be a reliable indication of primary ovarian failure.

A positive follicular hormone test is not an invariable index of full ovarian activity, since large amounts of this hormone may be found in some cases of amenorrhea and during the first stage of the natural menopause. A negative reaction however is an accurate index of follicular inactivity.

The administration of a potent ovarian and pituitary preparation, at the proper phases of the cycle gives promise of value and may be a step forward in the treatment of menstrual irregularities and sterility.

What we need most is a more potent anterior pituitary extract.

Thyroid products remain as possibly one of the most reliable and potent preparations at our command today and should always be tried when the basal metabolism is low.

The roentgen ray, when judiciously applied, seems to be an important therapeutic agent in combating endocrine dysfunction with its associated manifestations.

**Comment:** This article is well worth while read in its entirety by those who are interested in following the progress made in the study and care of the physiological defects so frequently encountered in gynecological practice.

—Wendell Long.

**Spinal Anesthesia—A Summary of Clinical and Experimental Investigation with Practical Deductions.** Bower, Clark, Wagoner and Burns, S. G. & O., June, 1932. Vol. 54, P. 882-897.

The risk associated with spinal anesthesia has never been fully recognized because of a misinterpretation of the true cause of the drop in blood pressure and a lack of appreciation of the early effects of intraspinal anesthetic on the nerves of respiration. This has interfered with the placing of spinal anesthesia in its proper category. We have always known that the extent of upward diffusion determines the degree of shock. As in ordinary shock the blood pressure falls, the skin becomes pale, the respiration shallow, but no one has written of having seen a suffused or congested intestine during a laparotomy under spinal anesthesia. Shock is found in those cases in which the anesthetic ascends higher than the topmost origin of the splanchnics.

The knowledge that cardiac dilatation with thoracic stagnation of blood may be an accompaniment of spinal anesthesia makes it possible for us to understand more clearly the catastro-

phes that have occurred in the past and to outline a routine to follow for selecting and protecting patients in the future who are candidates for spinal anesthesia.

**Outline for Reducing Anesthetic Risk in Spinal Anesthesia:**

#### I. Selection of patients—

Estimation of myocardial reserve most important. Contra-indications: if any two of the following are present spinal should not be given.

1. Weak or distant heart sounds.
2. High diastolic pressure, 110 or over.
3. High pulse pressure, 70 or over.
4. Electrocardiograph tracing positive for myocardial disease.

#### II. Development of technique—

1. Actual instruction.
2. First induction under supervision.
3. Familiarity with drug.
4. Selection of patient, see I.

#### III. Selection of drug—

Least toxic.

#### IV. Early detection of high effect.

Artificial respiration should begin within one minute after respiratory center is affected.

No outline can in any way take the place of experience, but these authors believe that it will help those contemplating using spinal anesthesia to avoid the catastrophes which are not uncommon in one's early experience. The proper evaluation of the risk is most important but some patients will react unfavorably under spinal anesthesia on the operating table. This happens where the myocardial damage has been of such a character that it escapes pre-operative detection. It is this type of case where it is essential that high effect be recognized early, and the authors advise the use of the respirometer for this purpose. This is of more help than cutaneous tests for height of anesthesia. The respirometer indicates to the surgeon at a glance the depth of the patient's respirations. If they have diminished he reminds the anesthetist to instruct the patient to perform deep breathing. If voluntary forced respiration cannot be accomplished by the patient, then forced respiration should be carried out by artificial means. It is here that the Drinker respirator, where available, is of the greatest use. Any of these procedures combats collapse by increasing intrapulmonary and intrathoracic pressure, preventing over-dilatation of the large venous channels and assisting the heart to empty by pressure from the distended lungs. The anoxemia sometimes following spinal anesthesia has a decided effect on the respiratory center and the oxygenation of the heart muscle. There can be no objection to the use of adrenalin or ephedrin. However, as these authors point out, neither of these drugs has prevented cardiac dilatation or relieved respiratory embarrassment in their experimental work. In sudden collapse the intravenous injection of adrenalin should be used in addition to forced inspiration.

Safe anesthesia is the preservation of epicritic and protopathic sensation above the sixth rib. Above this level cardiac and respiratory embarrassment may develop.

Up to this time there is no known method of absolutely preventing death from spinal anesthesia, but artificial respiration offers the best



means for combating respiratory embarrassment and the fall in arterial pressure.

—LeRoy D. Long.

**How Much Thyroid Tissue Should Be Removed In Toxic Goitre?** By Frank H. Lahey, M.D., Boston, Mass. *Annals of Surgery*, Vol. XCV, April, 1932, Page 529.

The amount of thyroid tissue to be removed in toxic goitre varies quite widely in different individuals and different types of goitre. It is of very great importance that the essential medium be attained in thyroidectomy for toxic goitre between too great removal of thyroid tissue and production of myxedema and too little removal and establishment of persisting hyperthyroidism. It is evident, therefore, that one cannot generalize about the amount of thyroid tissue to remove in terms of proportion of the entire gland. One cannot say that he customarily removes three-fourths, four-fifths or five-sixths of the entire gland, and be in a sound position. The attitude which everyone seeks to maintain in patients with hyperthyroidism is to remove enough thyroid tissue to produce a complete and lasting cure of the hyperthyroidism, but to leave enough thyroid tissue so that myxedema is not present.

In this article Dr. Lahey discusses the amount of thyroid tissue to be removed in toxic goitre from three aspects—the age of the patient, the character of the thyroid tissue to be removed, and the technical question of the removal of the thyroid isthmus. Due to the needs for thyroid secretion in development, care must be exercised in thyroidectomy for hyperthyroidism in children that too much thyroid tissue is not removed and myxedema produced.

Due to the relative inactivity of the thyroid in elderly patients, care must be exercised lest radical thyroidectomy produce a high percentage of myxedema in such patients.

Good sized remnants of thyroid tissue must be left after subtotal thyroidectomy when, following the pre-operative administration of iodine, involution of the gland has occurred.

Radical removals of thyroid tissue must be done and but small remnants left in patients with uninvolved thyroids, if one wishes to produce cures in patients with this type of uninvolved thyroid gland. The clinical features indicating the presence or absence of involution are important.

Good sized remnants of thyroid tissue must be left in subtotal thyroidectomy for hyperthyroidism associated with hyperinvolution or multiple colloid adenomatous goitre.

Complete removal of the isthmus of the thyroid and baring of the trachea do not produce any disturbing amount of post-operative tracheitis. Attempts to leave segments of the thyroid isthmus over the trachea make one tend to leave too large remnants of thyroid tissue particularly in primary hyperthyroidism. Complete removal of the thyroid isthmus with premeditated baring of the trachea and with extensive removal of thyroid tissue from the lateral lobes of the thyroid leaves a safe amount of thyroid tissue over the recurrent laryngeal nerve, and the parathyroid bodies, and makes possible the radical removals of thyroid tissue which are often necessary to bring about lasting cures in hyperthyroidism.

—LeRoy Downing Long.

**Thyroid Crisis.** By E. I. Greene and J. M. Greene, Chicago, Ill. *Annals of Surgery*, Vol. XCV, No. 4, April, 1932, Page 537.

1. Thyroid crisis is one of the most serious complications of hyperthyroidism.

2. As a rule this condition occurs in the primary toxic or exophthalmic goitre.

3. Thyroid crisis usually occurs in patients known to have hyperthyroidism but in whom no treatment has been sought or in whom inadequate treatment has been instituted.

4. Thyroid crisis may occur in individuals in whom there is no suspicion of thyrotoxicosis.

5. A crisis may come on immediately after operation or several days later.

6. Acute hyperthyroidism may be ushered in by physical fatigue, by physical stimulation, as a result of an intercurrent infection or appear after some surgical condition often trivial.

7. Measures not aimed to relieve the hyperthyroidism should be postponed until after thyroidectomy has been performed.

8. Adequate pre-operative therapy will in the majority of cases prevent post-operative acute thyroidism.

9. The picture of crisis may appear suddenly with no premonitory manifestations, or make its appearance slowly with definite symptoms.

10. The mechanism whereby a crisis is set into motion is not known.

11. The condition must be recognized early and proper therapy instituted immediately or death will frequently result.

12. Treatment consists of iodine, fluids, glucose, and morphine.

13. After recovery from a crisis, surgical intervention should be done with caution, waiting sufficiently long enough to get the patient in proper physical condition.

LeRoy Downing Long.

**Some Practical Aspects of Hypothyroidism.** Scott D. Breckinridge, Lexington, Ky. *American Journal of Obstetrics and Gynecology*, Volume XXIII, No. 6, June, 1932.

This is a presentation of 25 case histories of hypothyroidism given to show that slight to moderate degrees of hypothyroidism may be very important causal factors in a number of gynecological and obstetrical conditions. The author points out that menorrhagia is much more frequent than amenorrhea, and he feels that hypothyroidism is one of the most frequent causes of menorrhagia and metrorrhagia which should be excluded before resort is had to the curet, radium, X-ray or abdominal section.

—Wendell Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

### Chronic Kidney Conditions in Infants and Children, Wm. M. Happ, Los Angeles, Calif., California and Western Medicine, May, 1932.

Acute pyelitis constitutes one of the most frequently encountered infections in infancy and childhood. He states that he does not consider in this article acute pyelitis, as they respond readily as a rule to medical treatment. He cites 11 cases of recurrent and chronic pyuria in children, a condition often resistant to treatment. The infection is dependent upon some urinary obstruction interfering with the proper drainage of urine in a great majority of cases. Early diagnosis is highly important to obtaining satisfactory therapeutic results. In all of the reported cases there was a scarcity of symptoms referable to the urinary tract. Infants and small children do not complain of pain in the kidney region. Eneuresis and frequency of urination are the most common symptoms noted, and they are of no especial diagnostic importance as they are found in some normal children. Gastro-intestinal symptoms were outstanding and present in nearly all cases. Attacks of fever, vomiting, anorexia, nervous irritability, restlessness in sleep, abdominal distension diarrhea. This condition was found associated with ileo-colitis in several of the cases. Improvement in the urinary infection in some was noted on therapy of the gastro-intestinal condition. This frequency of association should lead to a careful study of the urine in these gastro-intestinal cases. Relief of symptoms was noted upon removal of the obstruction. The value of cystoscopy is emphasized in all pyuria cases which do not respond to medical treatment in a few weeks. Acute and acutely transient pyuria, he states, are not adapted to cystoscopy, and that it was not possible to set an arbitrary limit to medical treatment, but that each case should be considered separately. The youngest child in this series cystoscoped was 13 days of age, and the age, he states, is of no importance in cystoscopic therapy. General anaesthesia is rarely necessary. Improvement in drainage and stimulation of ureteric peristalsis are the important results of correct instrumental therapy. Removal of foci of infection elsewhere should be considered.

### The Arsphenamines and Neurosyphilis—Editorial—New England Journal of Medicine, July 7, 1932.

This editorial states that for many years there has been a misbelief among physicians that the use of arsenicals during the primary stages of syphilis leads to an increased incidence of neurosyphilis, that treatment especially if inadequately given would force the spirochetes and their toxins deeper into the tissues where they rest for many years to reappear later in the form of infection of the nervous system. That these organisms reach these tissues and remain dormant for sometime is undisputed, but treatment in the primary stages of the disease is another matter. In analyzing a series of 500 cases at the Mayo Clinic, Oleary and Rogin conclude there is no evidence to warrant the presumption that arsphenamines predisposes to or induces the development of

neurosyphilis. Even small amounts of arsphenamines are better than none as a protection of the nervous system of patients with acute syphilis, whereas early treatment in adequate amounts increases still further the percentage of patients whose nervous system is not affected.

### Persistent Perineal Sinus Cured by Transurethral Injection of Silver Nitrate. Eric Stone, M.D. New England Journal of Medicine, June 23rd, 1932.

A typical patient with prostatism, and having the cystoscopic appearance of enlargement of posterior commissure and right lateral lobe was operated (perineal prostatectomy) and developed a persistent perineal sinus, this was operated on after local manipulations with sounds, indwelling catheters irrigations and injections of silver nitrate were of no avail, an external urethrotomy, which healed for two weeks, when it again became infiltrated, red, pain and local bulging and again the sinus was reopened, again it refused to heal. Patient was urethroscoped and the sinus opening on the floor of the urethra located, a fulguration only succeeded in enlarging the urethral opening, later an ejaculatory catheter was introduced into the urethral side of the sinus and 10% silver nitrate injected, immediately copious irrigation with boric solution was used to control the severe urethral burning as some of the nitrate solution had regurgitated into the urethra. This sinus healed and has remained healed and the patient symptomless.

### Prostatic Resection—Editorial—New England Journal of Medicine, June 30, 1932.

In this editorial is a very good review of the literature on this subject, this method going back as far as 1834. During the past few years, Bumpus, Davis, McCarthy, Stern, and others have perfected instruments to cut with electric current and coagulate at the same time, and a wave of enthusiasm for prostatic resection is spreading over the country, spurred on by demands of the patient that they be relieved without an "operation." Is this demand justified? Have we here a substitute for prostatectomy? Dr. Hugh Young, one of the conservatives, holds that the method should be employed on only a limited number of cases, it requires anaesthesia, sacral or spinal, takes as much time as prostatectomy, anaesthesia in a poor surgical risk is perhaps the single greatest factor in mortality of prostatectomy. Median bars can be removed in this way, the large lateral lobes, so frequently met with is another matter. The author doubts that the channel tunneled through the prostate with these instruments gives as complete and lasting relief as removal of the lobes. Many brilliant results will be reported, but at the same time many failures will be encountered. The great danger in a new method of this kind is that it will be employed by those not qualified to meet the situation, they should be able to select cases suitable, and meet any complication that may arise. In early hypertrophy and median bars, and some malignancies resection offers a new way of relieving obstruction but should be attempted only by those trained in urethral instrumentation and experienced in surgery of the prostate.



### Mistakes in Diagnosis and Treatment of Syphilis, Austin W. Cheever and Wm. D. Wheeler, New England Medical Journal.

These authors state that diagnostic and therapeutic errors are at times unavoidable but there is no justification for avoidable mistakes. In the practice of syphilology lack of knowledge constitutes a grave public health problem and is responsible for the spread of a serious disease. They cite 11 cases of mistakes made, stating that they clearly demonstrated that the physician who first sees these cases should know a few of the rudiments of the diagnosis of primary syphilis, the dark field examination to determine the presence of the spirochete pallida. (2) They were not syphilis conscious, seldom suspecting syphilis, failed to recognize its manifestations. (3) Their knowledge of the therapeutics of syphilis is tragically inadequate. (4) They are totally unaware of any progress made in diagnosis treatment and laboratory research. He suggests a list of "lest we forget" hints which he states should be on every physician's desk and to be read at frequent intervals, these are (1) Consider every genital ulcer as syphilitic unless definitely ruled out by repeated negative dark field examinations. (2) Remember that extra-genital chancres are not uncommon, and may be located anywhere on the body. (3) Bear in mind that a chancre may be hidden in the female in the vagina. A painstaking search should be made in every case. (4) Have routine laboratory blood tests, Wassermann, made on all of your patients, and do not forget that one negative does not rule out syphilis. (5) Have the blood of every pregnant woman examined for syphilis early in pregnancy. A positive blood test would indicate immediate treatment for the expectant mother and incidentally for the foetus. (6) The time to discover a congenital syphilitic is before the child is born, treat the syphilitic mother in pregnancy, all through pregnancy, and then continuing the treatment of the child from its birth for a number of years. (7) Treatment in all cases of syphilis should be prolonged, intensive when necessary. One negative blood test during treatment does not mean cure. About two to five years is necessary before a probable cure is effected. (8) Examination of the spinal fluid is essential in every case of syphilis, and is often the only means of detecting incipient neuro-syphilis. (9) Always suspect syphilis, in any of its stages it may simulate other diseases. (10) Whenever in doubt concerning the diagnosis of syphilis consult a syphilologist.

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### REACTIONS AND RESULTS OBTAINED FROM SPECIFIC VACCINE THERAPY IN CHRONIC INFECTIOUS ARTHRITIS

E. GOLDFAIN, M.D.  
OKLAHOMA CITY

Sometimes it is of definite value to stop awhile and look back over what one has done in his special line of endeavor. In this way we get a bird's eye view of details and little things that go to make up the sum total clinical results.

We have now been using vaccine therapy as a fundamental procedure in the treatment of arthritis for a period of at least two years. In general, we feel, as we look back over cases that have been treated prior to, and the cases that have been treated during the last two years, that distinct increase in the percentage of cures and improvement has occurred as the result of our latter procedure. Such impression makes us feel that the method we are using in the treatment of chronic arthritis is worthwhile continuing and justifies us in advising others as to its intricacies. It also makes us feel that by a dissemination of information secured as a result of this management of chronic arthritis we may be able to aid the average medical practitioner, who first sees these cases in their early stages, to a greater consciousness of the possibility of securing improvement in these chronic cases. He can, thereby, be made to feel that he should not neglect them, but handle them in an energetic and systematic manner along a well formulated line of attack.

In a previous paper entitled, "Rationality of Vaccine Therapy in Chronic Infectious Arthritis," I set forth that phase of our work in vaccine therapy. It seemed to me at that time, that when a proper serological and bacteriological diagnosis had been made in the individual case of

chronic arthritis, that vaccine treatment, when properly applied, with a good knowledge of what it could do in an adverse as well as in a favorable way, was fundamental in the treatment of the disease. A knowledge of what might happen in an adverse way as well as favorably is extremely necessary for the practicing physician; else he misses the entire point of the treatment. He is then likely to continue to treat the patient with increasing doses of vaccine when those being used are already too large and are causing an exacerbation of the arthritis rather than an improvement.

When the specific vaccine therapy is used along the lines that we recommend, I believe that it is much better to assume that all unfavorable reactions in the patient, while under treatment, are due to too large doses of vaccine rather than simply an exacerbation of the disease process. This assumption is tenable only when as a result of examination and thorough check-up of patient we are sure that there is not present an active focus of infection, or that some disease condition other than arthritis is present and is acting in an unfavorable way on the patient. Therefore, when an active focus of infection or some other disease process is definitely ruled out, and the patient is not making headway under specific vaccine therapy, reduce the dose markedly and watch the effect. Often you will be surprised at the better behavior of the patient under a reduced dose.

A knowledge of what may happen as the result of specific vaccine injections has been acquired by familiarizing ourselves with the work of Drs. Crowe, Burbank, Cecil and Small, and by constantly observing our own patients whom we have had under vaccine treatment.

Before I go on I want to outline the type of reactions that we have noticed in these cases when treated with specific vaccine therapy, and which closely coincides with the outline reported by Small in the Jour-

nal of Laboratory and Clinical Medicine, August, 1930, and set forth below:

#### GENERAL REACTION

A. *Initial Phase*—12 to 24 hours, lasting 24 or more hours.

Asthenia.  
Malaise.  
Drowsiness.  
Wakefulness.  
Blood pressure—down.  
Pulse—accelerated.  
Temperature—slight rise at times.  
Arthritis—same, or little worse.  
Weight—loss.

B. *Well Being or Euphoric Phase*—May last two to three days.

C. *Relative joint comfort.*

#### *Secondary Phase.*

1. Aggravation of joint symptoms (increase in swelling, stiffness and pain).
2. Tremulousness.
3. Nervousness—excitability.
4. Depression.
5. Irritability.
6. Anorexia.
7. Nausea.
8. Vomiting.
9. Cool, moist skin.
10. Slow pulse.
11. Lowered blood pressure.
12. Subnormal temperature tendency.

2. *Focal Reaction*—Constantly present with proper dosage.

- a. Activation of objective joint signs.
- b. Activation of subjective joint symptoms.
- c. Myalgias.
- d. Neuralgias.

3. *Localizing Reaction.*

- a. Does not occur often.
- b. Valuable in pointing to a closed focus of infection.
- c. An acute activation of inflammation in a quiescent focus.
- d. Comes on with secondary reaction.
- e. Most often noted following first or second trial dose.

4. *Local Reaction.*

- a. Hyperemia at site of injection.
- b. Wheal at site of injection.
- c. Occurs when vaccine is given intracutaneously.

Allow me to state a few words in respect to the manner of preparation of our vaccine. To begin with, men like Drs. Zinnser, Swift, Small, Kolmer, Duke and others have come out with statements that in their opinion there is an additional factor present in cases of chronic arthritis besides that of infection. This additional factor is the development in the patient of a state of extreme hypersensitiveness or what we might call a state of allergy. Apparently in those cases, as contrasted to others who carry focal infection and do not develop this hypersensitiveness, there must be something that is inherent in the individual himself and which probably has been transmitted to him hereditarily. This hereditary factor is the predisposition to become allergic. If we assume such factor to be present in these cases, *namely*, the tendency to an allergic state, then such tendency is that unknown factor found in cases of focal infection which develop chronic arthritis. This theory explains why they develop chronic arthritis while others with as severe or severer degrees of focal infection do not develop a chronic arthritis.

The allergists have proven fairly conclusively that an allergic disposition is inheritable. It may be then that this tendency to develop allergy to the products present in the focus of infection explains why rheumatism seemingly runs in families. If such a factor is present then it is necessary that vaccine therapy should be used primarily on the basis of desensitization and should be so prepared that the allergens are not changed during the preparation.

A method of keeping intact the allergens we feel can be accomplished by inactivating the organisms by means of simply suspending them in a  $\frac{1}{2}$  to 1% phenolized normal salt solution for a period of 24 to 48 hours in order to completely attenuate them. Such vaccine when used, and if properly obtained, will desensitize the patient to the same proteins and possibly non-protein structures to which he had become sensitive.

By preparing our vaccine without subjecting organisms to heat, we, therefore, keep intact those substances to which the patient has become hypersensitive. The reaction produced by a vaccine prepared by this method is more severe than that of a vaccine treated by heat. When the vaccine is inactivated with heat it seems to us that we are simply giving the patient



non-specific protein therapy. We are not desensitizing him by such methods because the heat has tended to change the inherent protein structures of the organisms.

When we first began our vaccine treatment we were using doses which were very small in amount when compared with the standards of vaccine therapy doses, such as are employed in the immunization of typhoid or for building up resistance to colds. Our doses ran approximately in multiples of 10 million, averaging on the whole from 15 to 20 million. Our results were not as satisfactory as we wished them to be. In some cases we definitely caused an aggravation of the patient's trouble. For awhile we were becoming discouraged with the results that we were getting. At that time, however, we were comparing our own work with that of Drs. Burbank, Crowe, Small and others. We began to reduce the dose that we used so that we were using instead of multiples of 10 millions per dose, multiples of a million. Still our results were not so satisfactory and further decrease of dosage resulted, so that we were using doses ranging from 500,000 to one million. Our results were still unsatisfactory. The patients reacted with many symptoms and much discomfort and would be in a refractory phase from one dose to the next. The patients at this point reacted as set forth in Table No. 1.

A further stepping down of dosage to the point where they were running below 100,000 followed. It was here that our results began to be more to our liking. The reactions were not so severe nor as long drawn out. They were more of a focal than of a general nature and they would last only 24 to 72 hours followed by a period of comfort before the next dose was due. We noticed that as a result of these smaller doses the patient would develop

increase in strength and in vitality and in well being. They became more hopeful; less subject to depression, and began to manifest more faith in our treatment; and actually insisted on continuation of treatment even when we felt that further treatment was not indicated. This eagerness and actual anxiety to continue vaccine therapy was most apparent in those patients who had suffered with a marked degree of atrophic arthritis for many years. This hopeful attitude has developed in some of these new cases only rather recently as a result of our marked decrease of dosage. We have now come to the point where, in many cases, we begin with doses of 10,000 organisms and even then find that we cannot increase such dose and often have to reduce it.

In table No. 2 is set forth the types of reaction of patients to the smaller doses.

A case of very severe atrophic arthritis that I have had under treatment for over a year, and which has been gradually getting better, has noticed the greatest progress and improvement when the dose of vaccine contained as low as 50 organisms. With such ridiculously small doses, she experienced a reaction of some weakness and exhaustion and pains in her joints within a few hours after the vaccine was given her subcutaneously, which reaction lasted about twenty-four hours and then disappeared, leaving a feeling of well being. Such observation has led me to construct a chart of reactions that we may get as a result of vaccine therapy and to reduce the dose markedly and rapidly until such point is reached where the dose given excites only a limited or no focal reaction during the first twenty-four to forty-eight hours. If the patient experiences a general reaction, the dose is too large and the succeeding dose should be as much as 100th or even as low as 1,000th of that which caus-

GENERAL REACTION PHASES

4-6			2										3-7			
PATIENT	Malaise	Exhaustion	Headache	Nausea	Vomiting	Miserable-ness	Temp. 1½ to 2"	Puffy eyelids	Dopiness	Drugged feeling	Dizziness	Constipation	Insomnia	Weight	Blood Pressure	Pulse
G. Smith	xx	x	x			x								—	—	
L. D.	xxx	xx	xx	x			x				xx		x	—	—	
E. S.	xxx	xxx	xx	xx			xx	xx		xx	x		xx	—	—	x
G. Jones	xxxx	xxxx	xxx	xxx		xxx	xxx		xx	xxxx		xxx	xx	—	—	x
S. J. Lee			xxx	xxx					xxxx	xxxx						

— drop  
x positive

FOCAL REACTION

Patient	Time interval before symptoms appeared.		Duration		JOINTS					MYALGIA			NEURALGIA		
	Hours	Days	Hours	Days	Pain	Soreness	Swelling	No. affected	Location	Chest	Back	Neck	Sciatic	Trigeminal	Brachial plexus
J. B.		2-4		2-4	xxx	xx	xxx	Multiple	Spine Knees Ankles	xx	xxx		xx		
G. S.		2-5		2-3	xx	xx	—	Single and Multiple	Spine Knees		xxx	xx	xx		
L. D.	6	2-3		2-3	xxx	xxx	xx	Multiple	Shoulders Fingers Spine Feet		x				xxx
E. S.	12	1-2		2-7				Multiple	Feet Knees						
G. J.	3	1-2		2-14				Multiple	Feet Shoulders Hands Spine	xxx x	xx xx	xx xx	xx	xxx	
S. J. L.								Multiple and Single	Spine		xx xx	xx xx			

ed the general reaction. If only a focal reaction is elicited the dose is accordingly kept the same or reduced to 1-10 to 1-25th at the succeeding time of treatment.

It is often stated that the proof of the pudding is in the eating. I have talked about sensitization without answering a natural question that would arise in the hearer's mind, viz: Will not the patient become sensitized to the bacterial proteins that are being given to him for treatment? The answer is he may and sometimes does. I have more than once had to figure with such a problem. A patient receiving vaccine and progressing well would suddenly cease to improve. Additional and larger doses would make him actually ill. In addition his skin would react to vaccine doses with pin head size papules, itching and erythema as set forth in table No. 3, below. In some cases the skin sensitivity present would show up with only a few injections of vaccine, as also set forth in table No. 3, showing, therefore, the innate tendency of these patients to develop allergic reactions.

A reaction not often obtained but of definite value is the localizing reaction. In some patients, following one or more vaccine injections, a stirring up of a closed focus of silent infection will occur, which would not be discovered during our systematic check up of the patient. The value of this is definite, for it turns our attention to the treatment of such a focus, which left untreated, will not result in the utmost of recovery for the patient.

Table No. 4, illustrates two cases which reacted with localizing symptoms. The patients at this point were reacting as set forth in Table No. 1.

LOCALIZING REACTION

	Throat	Nasopharynx	Teeth	Sinuses	Prostate	Gall Bladder	Appendix
J. B.						x	x
S. J. L.			x				

In conclusion, I wish to repeat and emphasize this point, viz. that in our experi-

SENSITIZATION REACTIONS OF SKIN

PAPULES				FIBROSITIS		WHEEL	ERYTHEMA	NODOSUM
Patient	Size	Color	Itching	Location	Area	Location	Location	Size
	1/4 to 1/8"	Pinkish Erythematous	xx	About Papule	Dime to Quarter	Discrete	Discrete	Dime
G. S.	xxx	x	xx	x	x	x	xxx	x
J. B.	xxx	xx	xxx	x	x	—	—	—



ence the smaller the dose the more favorable the result in cases of chronic arthritis. I might add one more observation. It is best to consider an unfavorable exacerbation of arthritis as an evidence that the dose of vaccine is too large, and quickly reduce the dose until one is giving a dosage which, according to our present standards, seems ridiculously small, yet which as a result of our close observation of these cases leads us to the belief that such ridiculously small doses are the optimum doses and sometimes even too large. Also, it is best that we continue to treat these patients on a new basis, *viz*: by the administration of vaccine doses usually running below 50,000 organisms and even below 10,000; or in some unusually hypersensitive cases, below 1000. It is best to consider unfavorable progress of cases as an evidence of adverse reactions to vaccine therapy because of too large dosage and that such reactions be a prompt indication to radically reduce the dose being given the patient.

#### ULTIMATE RESULTS FROM OPERATIONS ON BILIARY TRACT

E. Starr Judd and James T. Priestley, Rochester, Minn. (Journal A. M. A., September 10, 1932), state that although cholecystectomy is now generally preferred for primary disease of the gallbladder, certain surgeons still perform cholecystostomy in a considerable number of cases. The authors' data indicate that a greater percentage of good results followed the former operation. Ordinarily the gallbladder is removed except in the presence of certain definite contraindications. If the patient is an extremely poor surgical risk, as in the presence of jaundice or a small atrophic liver, if it is anticipated that the gallbladder will be needed because of disease of the common bile duct, and occasionally if there is too much infection surrounding the gallbladder, cholecystostomy will often be preferable to cholecystectomy. If cholecystectomy is properly performed the immediate risk is probably no greater than surgical drainage of the organ, except in the cases mentioned. During 1931, cholecystectomy was performed at the Mayo Clinic in 579 cases for chronic cholecystitis with a mortality of 1.7 per cent. If it is necessary to open the common bile duct, the authors feel that primary closure is never advisable. A variable period of drainage with a T-tube, ranging from three or four weeks to a year or more, depending on the lesion encountered, has given satisfactory results. When this type of drainage is employed, complete control over the flow of bile is maintained, as it may be drained externally through the long arm of the tube to the outside, or the tube may be clamped off, thus forcing the bile down into the duodenum. If it is considered desirable, fluids may be administered through this tube. A postoperative stricture of the duct does not result from the use of the tube, nor is there any danger of a persistent biliary fistula, provided patency of the common bile duct is established at the time of the operation.

#### LOW BACK INJURIES WITH PARTICULAR REFERENCE TO THE PART PLAYED BY CONGENITAL ABNORMALITIES

FRANK D. DICKSON, M.D.  
KANSAS CITY, MO.

It is common knowledge that trauma to the lower back at times produces results which seem far out of proportion to the injury sustained. Furthermore, the resulting disability is too frequently a prolonged one, often ending in complete incapacity. In recent years, probably because of great industrial expansion and the wide introduction of the automobile, such injuries seem to have increased in frequency until the so-called "low back problem" has become a very important one. This is particularly true in industrial surgery, in the practice of which trauma to the back, the result of occupation or accident, constitutes one of the most difficult types of case encountered so far as diagnosis and restoration of function is concerned. Diagnosis in low back injuries is difficult even under the most favorable conditions and this difficulty in making a satisfactory diagnosis has led in many instances to a suspicion that no real pathology was present and that malingering was at the bottom of the complaint. While this is probably true in a certain percent of cases such a conclusion should not be arrived at without careful examination and the elimination of all possible causative factors. Failure to secure relief of symptoms after prolonged treatment has also frequently resulted in the conclusion of malingering. Here again we may not take this position unless we are quite sure that a correct diagnosis has been made and the proper form of treatment has been carried out. In other words, many of our failures to secure successful results in the management of low back conditions may be due to our own short-comings in both diagnosis and treatment, and perhaps the answer to this vexing problem lies in a better understanding of the pathology of this region and more adequate treatment based upon the pathology present. What I wish to do in this contribution is to call to your attention certain abnormalities which may be found in the lower back and discuss the manner in which such abnormalities may give rise to symptoms following trauma and may actually determine

the form of treatment necessary to secure relief.

The two regions most usually affected in low back injuries are the lumbosacral articulation and the sacroiliac articulation. Both these regions may be the seat of pathology the result of so many different causative agents that to attempt to discuss them all in the time at our disposal would be but a recital of conditions and would I am sure be most confusing. I propose then to limit this discussion to the consideration of congenital defects of the spine as the underlying pathology in persistent low back pain and disability following trauma. Such congenital defects are important in that they cause weakness in the spinal architecture, thus providing points of lowered resistance to the strain of function and so render the spine more vulnerable to injury. Since it is the lumbosacral articulation which is most generally the site of congenital defects it is this region which will be discussed; congenital defects are seldom found in the sacroiliac joint, this region, therefore, suffers to a less extent from architectural defects the result of such congenital abnormalities and will not be touched upon. It is an interesting fact in this connection that, in our experience and that of many who see a large number of low back cases, those in which symptoms are referable to the lumbosacral joint far outnumber those in which the symptoms point toward involvement of the sacroiliac joint. In our series of cases of 360, 242 cases were diagnosed as lumbosacral and 118 as sacroiliac.

The lumbosacral articulation is a very important joint. Through this articulation the weight of the trunk and upper extremities is transmitted to the pelvis. In addition, it plays an important role in spinal movements; Goldthwaite states that fully one-half the motion of the trunk below the lower dorsal region is made in this articulation. Finally the lumbosacral articulation is the point of junction between the movable spine above and the more or less fixed sacrum and pelvic girdle below; this means considerable stress even under ordinary conditions. We have, then, a joint which must combine great strength with freedom of motion, a difficult combination. To meet these requirements a definite type of joint is needed and a brief consideration of its anatomy will be worthwhile.

#### ANATOMY

The lumbosacral articulation in its main

part inclines downward and forward about 42.5 degrees, when the person is standing erect, and were it not for the presence of supporting structures, the lumbar vertebrae would slide forward on the sacrum. These supporting structures are the articular facets of the sacrum into which the lower articular processes of the fifth lumbar vertebra fit, and the supporting ligaments. The articular facets in the lumbar region face practically inward and outward with a slight convergence toward the front which blocks any slipping forward of the vertebra above on the vertebra below. The ligaments, particularly the iliolumbar, which passes from the body and transverse processes of the fifth lumbar to the iliac crests, afford considerable support but would soon become stretched and lose their supporting character, if the major portion of the work were not done by these bony articular processes.

As stated there is considerable motion at this joint but chiefly in the direction of flexion and extension. In forward bending, or flexion, the motion at the lumbosacral joint is made partly by change in the shape of the intervertebral discs but chiefly by the articular processes of the fifth lumbar sliding upward on the opposing processes of the sacrum. With a joint acting in this manner, it is possible that if flexion were carried too far, as for example by certain forms of trauma, the articular processes of the fifth lumbar might slip entirely off those of the sacrum, allowing the vertebra to slide forward and a condition of spondylolisthesis or partial spondylolisthesis be produced. If such a displacement were to occur on one side only, the displaced articulation would slide forward and to the outside and the fifth lumbar vertebra carrying with it the entire spine be rotated forward on the side of the displacement.

Such displacements might occur due to trauma by which the body was bent sharply forward, or forward and to one side. With the strength of this articulation and its supporting ligaments, it is almost inconceivable that such a displacement could occur without producing a fracture unless there were contributing factors present, which would tend to weaken the joint, and so decrease its stability and render it more vulnerable to injury. It is the presence and character of these contributing factors and the part they play in the causation of persistent low-back symptoms that



I wish to emphasize in considering injuries to this region.

A critical survey of the low-back cases which have been diagnosed injuries to lumbosacral articulation in our clinic has led us to conclude that while there are a variety of conditions which could be considered as factors in causing weakness in this region, and so favor displacement or partial displacement of this joint, there are certain of these which seem to be more important. We will discuss these in some detail and the others in a cursory way.

The conditions which most commonly seem to cause weakness of the lumbosacral joint we have placed in two groups:

1. Increased sacral inclination.

2. Congenital abnormalities and deficiencies, such as abnormalities of the articular processes of the fifth lumbar vertebra and sacrum, spina bifida occulta, spinal clefts, sacralized transverse processes, enlarged transverse processes and enlarged spinous processes.

Many different opinions are held upon the importance of the part played by the conditions cited above in the persistence of back symptoms following injury. There are those who would ascribe to one or the other of these most of the blame; there are others who would deny that any of them play a role of importance as a contributing factor in low-back disability. Our experience leads us to believe that if we omit from our discussion such condition as osteoarthritis of the spine, a fairly common condition, general toxic conditions, tuberculosis and neoplasms, one of these pathological conditions will be found as the basis of most of the low-back injuries presenting a history of long-continued disability. All can be shown to tend to cause decreased stability of lumbosacral articulation in one way or another, and in the discussion, we will attempt to indicate the manner in which each acts, and its relative importance, as we have studied them.

#### INCREASED SACRAL INCLINATION

While increased sacral inclination is found in most hollow-backed individuals it is also met with in those with no apparent hollowing of the back and must in the light of conclusions arrived at by studying a large number of lateral views of the spine be considered a congenital abnormality of the lumbosacral region. It is

in reality the cause of the hollow back in most cases, not the result of the hollow back. With the normal sacral inclination, we have the lumbosacral joint at a mechanical disadvantage as the fifth lumbar vertebra rests upon the top of the sacrum at an angle of 42.5 degrees. If we now increase the sacral inclination until the plane of the lumbosacral joint is a right angle, or even an acute angle, as it is in some cases, it is obvious that the stability of the articular processes between the fifth lumbar vertebra and the sacrum will be greatly reduced and the major part of the support of the fifth lumbar vertebra will be thrown upon the ligaments. With such a weak architectural arrangement it is not difficult to appreciate that if this joint is subjected to undue stress or strain the ligaments may readily be stretched or ruptured and severe local damage done. It is even conceivable that deprived of the checking action of the supporting ligaments there may occur an actual subluxation of one or both of the lumbosacral articulations. I do not believe however, that such an actual dislocation or spondylolisthesis occurs in this way; spondylolisthesis is due to a different type of congenital defect. Once damage has been suffered by such an architecturally weak articulation it is certain that recovery will be slow and perhaps never complete. In 35% of our cases this condition was considered the causative factor, not only in predisposing the lumbosacral joint to injury but in the persistence of symptoms.

Congenital abnormalities of the spine of a developmental character are not uncommon and the most usual site for such abnormalities is in the lumbosacral region. George in his valuable contribution on this subject states that 35% of all spines X-rayed in his laboratory for any purpose showed congenital abnormalities in the lumbosacral region. Fully 50% of these abnormalities exist without symptoms. Any considerable variation from the normal in this region, however, must be taken into consideration as a contributing factor in causing potential weakness of the lumbosacral articulation. Of these congenital abnormalities, we feel that abnormalities in the articulation between the fifth lumbar and the sacrum, spina bifida occulta of the first sacral segment and spinal clefts are the most important in causing

an architectural weakness in this region, the others are less so.

#### ABNORMALITIES OF THE ARTICULAR PROCESSES

It is extremely difficult indeed to demonstrate in a roentgenogram abnormalities of the articular processes, it being frequently necessary to arrive at a conclusion regarding this condition by the appearance and position of the fifth lumbar vertebra. Goldthwaite, however, has demonstrated these variations and described two types of articular processes; one of these is the so-called crescentric articulation, the lateral portion extending backward almost at a right angle with the anterior transverse portion. Such an articulation by its shape forms a very stable joint and one difficult to dislocate. The other type consists of a flat articular surface with the axis nearly transverse. It is obvious that such an articulation is much less stable than the preceding type, especially as it may have a decided forward inclination instead of the usual vertical position. We have seen this type of articulation at operation and demonstrated the extreme mobility of the joint which results, so much so that it was quite evident that a definite amount of slipping forward of the articulating processes on one or both sides could very readily occur and a subluxation result.

These two types may occur in the same individual, giving us a crescentric articulation on one side and a flat articulation on the other side giving a weak joint on one side and a strong one on the other. With trauma applied in the proper direction, it is quite possible for the strong side to remain in place while the weak side could readily be levered out of position and a subluxation produced.

That this variation in the shape of the articular processes of the fifth lumbar vertebra and sacrum play a very important part in causing a potential weakness of the lumbosacral articulation seems evident from our series of cases. This condition was diagnosed as the most probable cause of trouble in 23 out of 56 cases in a study made of a special group. The diagnosis in these cases was based upon a very careful study of the X-rays and actual inspection of several of these articulations at operation. In 6 out of 17 cases operated upon, we were convinced that a more or less flat articulation was present.

#### SPINA BIFIDA OCCULTA AND LATERAL CLEFTS

These conditions are due to the failure of the three or sometimes five (in the fifth lumbar) centers of ossification of the vertebrae to unite properly, resulting in incomplete closure of the neural ring (spina bifida occulta) or failure of the lateral masses to unite so that the vertebra remains separated into two distinct parts connected by fibrous tissue only. Sir William Turner in his monograph on the human skeleton in the Challenger reports states that spinal clefts existed in 5% of all the subjects examined. Such clefts were found in only 8 cases of our series of 242. It is possible however that many may have been overlooked in the earlier cases because of inadequate radiograms. Spina bifida is easily shown by X-ray, the clefts do not show except under very favorable conditions and with carefully taken roentgenograms.

Spinabifida occulta of the first sacral segment results in a very unstable articulation between the sacrum and the fifth lumbar vertebra. This instability we have proven many times at operation when it was demonstrated that the first sacral segment was extremely loose, so much so that it may be grasped in a pair of forceps and moved extensively from side to side and up and down.

Lateral clefts in the fifth lumbar vertebra produce a similar lack of stability in this vertebra since they permit of independent action of the upper and lower articular processes of the vertebra instead of a simultaneous one and false motion at the cleft. It is quite evident that given a fifth lumbar vertebra with such deficiencies we have an architectural weakness which can allow of considerable abnormal mobility between the various segments of which it is composed. As evidence of the possibilities of what may occur in such a vertebra we find occasionally that even under the stress of ordinary use the fibrous tissue composing the clefts yields and stretches and a gradual slipping forward of the body of the fifth lumbar vertebra takes place and a true spondylolisthesis occurs.

Here again it is conceivable that when a spine in which we have a spina bifida occulta of the first sacral segment of clefts in the fifth lumbar vertebra is subjected to the increased strain and stress of trauma it may prove unequal to the bur-



den imposed upon it, give way at its weak point and damage be caused which it is difficult to repair with resulting persistent symptoms.

#### ENLARGED AND IMPINGING TRANSVERSE AND SPINOUS PROCESSES

The transverse processes of the lumbar region vary greatly, some are short and thin, and others are large and thick. The large transverse processes may at times extend so far laterally and be so shaped as to impinge upon the top of the sacrum or the ilium, at times they are completely sacralized. Spinous processes may be unduly long and so impinge upon those below or may do so because of extreme lordosis. It is conceivable that such impinging processes in certain forms of trauma such as forward and lateral bending or hyperextension may, by introducing a levering force, bring about a slipping of one of the articular processes, particularly if one or both processes belong to the weak type. Great importance has been given to these last two types of abnormality as a complicating factor in injury of the lumbosacral articulation by some writers, particularly Goldthwaite. While convinced that they probably play a part, we feel that their role is so largely a matter of conjecture that we prefer to consider them as occasionally responsible rather than frequently so.

These four types of abnormality of the lumbosacral region are so far as our experience goes, those most frequently present in patients giving a history of persistent low back symptoms following injury. The association of such abnormalities and persistence of symptoms seems to us so important a feature of the pathology of low back injury as to deserve careful consideration. In only 3.5% of cases in our series in which low back symptoms persisted in spite of treatment could no abnormality be found and the spine classed as normal.

We have in the lumbosacral articulation, a joint which is subject to great stress under ordinary conditions of life, while as the result of occupation or injury, this stress may be tremendously increased. An articulation which is normal in structure should be capable of withstanding such increased stress without suffering more than temporary damage to its supporting structures, muscles and ligaments. We have, however, in apparently 35% of all individuals abnormalities and defi-

ciencies in the lumbosacral region, which seem to have a very definite tendency to decrease the stability of this articulation, and so render it more liable to injury and displacement, when subjected to undue stress by reason of trauma incurred. In estimating the severity of an injury to the lumbosacral region, such structural weaknesses must be taken into consideration, as they unquestionably have a direct bearing upon the course and final outcome of the condition.

#### DIAGNOSIS

The symptoms which result when such architecturally weak spines as we have been discussing are injured are as a rule clean cut. Time will not permit of a detailed consideration of the symptom complex but there are four outstanding signs which should make us strongly suspect a congenitally weak spine. These are (1) persistent dull pain in the lower back referred into both buttocks increased by activity; (2) persistent local tenderness in the region of the lumbosacral articulation and iliolumbar ligaments; (3) definite increase of pain on either extreme hyperextension or hyperflexion of the spine; (4) feeling of weakness and insecurity in the lower extremities.

I should like here under diagnosis to make a definite plea for careful X-ray examination of the spine in low back injuries and a more intelligent study of the plates when taken. An adequate roentgenological examination of the spine should include a clear anterior posterior view and two lateral views, one with the spine completely extended and one with the spine completely flexed. Often what seems to be a normal spine in one position becomes a definitely abnormal one in another position and unless plates are taken to show the spine in all positions information of great importance in diagnosis and treatment may be missed.

A correct diagnosis in back injuries is essential to successful treatment, the cutting down of the period of disability and restoration to normal or as near the normal as can be attained. On the other hand, failure to correctly size up the situation and consequent long disability period with its discouragement and loss of faith in ultimate cure, makes the low back problem a very difficult one. The making of a correct diagnosis is not always easy but a careful history, a painstaking examination with a proper understanding of symp-

tomatology and finally good X-ray pictures taken in the anterior posterior and lateral planes, interpreted with an understanding of the possibility of abnormalities involving this region, should enable one to make a fairly accurate diagnosis, give a prognosis based on pathology and lead to the institution of proper and result-producing treatment.

#### TREATMENT

In considering the treatment of cases of lumbosacral injuries, it should be clearly borne in mind that such injuries involve two types of spine—the normal spine and the abnormal spine. It is our opinion that a very different attitude must be taken as regards both prognosis and treatment when dealing with a normal spine and an abnormal one. Injuries to normal spines form the bulk of the spinal injuries both in industry and in ordinary civil life. In injuries to normal spines, tears of ligaments, aponeurotic and muscular structures should under adequate treatment, follow a normal course to recovery, just as a sprain or strain or dislocation of any normal joint does; with this difference—that such back injuries will be slow in recovery because of the greater difficulty in giving them adequate fixation. In injuries to the abnormal spine, we cannot in the majority of cases expect such a normal convalescence. We are dealing with a potentially weak structure which is capable of functioning under ordinary conditions quite satisfactorily; when, however, such a structure has been injured, it will rarely return to anything like its former condition; and frequently the result is a more or less incapacitated individual, incapable of returning to an occupation which requires much physical exertion. This difference must be clearly distinguished and kept in mind in outlining a plan of treatment for injuries to the lumbosacral region.

Let us first consider the treatment of an acute case, be it in a normal or potentially weak spine. Remembering that an injury in this region has possibilities of being a very disabling one, the patient should be put to bed, properly strapped and an X-ray taken in the anterior posterior and lateral planes. A careful examination should then be made, taking into consideration the X-ray findings and the seriousness of the injury estimated. If the spine is a normal one, adequate fixation by strapping, brace or plaster cast should be given and maintained for a

period of time commensurate with the severity of the symptoms. As soon as the acute symptoms disappear, physiotherapy in the form of massage, hot and cold baths and therapeutic light, and finally exercises should be used to bring about as rapid a return to normal as is possible. Our experience has been that adequate fixation from the first often saves a great deal of time in convalescence. Also too early attempts at resumption of function are to be avoided—back injuries even in normal spines require a longer period for recovery than most joints and cannot be hurried.

In cases in which muscle spasm and deformity persist and improvement is not as rapid as it should be, we are accustomed to give an anaesthetic and manipulate the spine as it is our feeling that in such cases the muscle spasm is maintaining the malposition of the articulation and must be eliminated. This manipulation is carried out with the patient on his back on a hard table with the pelvis fixed. The extremities are then in turn raised and flexed with the knee fully extended until a normal degree of flexion of the hip joint is possible. To accomplish this, frequently requires a prolonged stretching. A plaster cast is then applied from the lower ribs to the knee on the affected side, this remains on from two to three weeks, after which the usual limbering up treatment is given. With this procedure we can in about 50% to 60% of cases secure relief of symptoms and a comfortable back and insure a fairly rapid convalescence.

Our experience, however, with spines showing one or more of the congenital defects which we have mentioned as factors in causing the lumbosacral region to be structurally weak; *i.e.*, increased sacral inclination with prespondylolisthesis, defective articular processes, spina bifida occulta, spinal clefts and abnormal transverse and spinous processes, has been quite different. We find that such cases do not progress along a normal course to recovery; on the contrary, it is difficult or impossible to get such backs comfortable or if relief is secured, within a varying period of time, there is a recurrence of the symptoms. In other words, a period of partial or complete incapacity is entered upon, the overcoming of which taxes one's ingenuity to the utmost. As the result of a very discouraging experience with these cases, we feel that operation offers the only relief that gives promise



of remaining permanent. If we have a fifth lumbar vertebra which is structurally weak by reason of increased sacral inclination with free spondylolisthesis or one of the congenital abnormalities, and so incapable of functioning properly, its elimination as a movable vertebra by converting it into a fixed sacral vertebra through artificial ankylosis is a logical procedure. By doing this, we eliminate the weak and symptom-producing lumbosacral articulation, and throw the burden of its work upon the articulation between the fourth and fifth lumbar vertebrae which is rarely weak and so capable of assuming quite readily the function of the eliminated joint.

I do not wish to suggest operation as the method of choice in early cases, nor can I see any good to be accomplished by stabilization in a normal spine. I do maintain most emphatically, however, that in the abnormal spine which does not respond to well planned conservative treatment within a reasonable length of time, or which readily relapses after apparent recovery, operative treatment is not only indicated but offers the only promising means of securing results. Furthermore, once the indications for operation are demonstrated, it is our feeling that procrastination gains nothing, but on the contrary, does distinct harm in that the longer the period of disability and incapacity, the more difficult is the return to normal and the greater the danger of an unfavorable psychic element entering into our problem.

In our clinic in 242 cases we have advised operation upon 23.3% of the lumbosacral cases and have actually operated upon 13.3% with only two failures so far as we can determine. In those cases in our series we diagnosed as sacroiliac, 118 or 10.7% were operated upon with no failures.

In conclusion may I summarize the points I have tried to make:

1. Congenital abnormalities of the lumbosacral articulation occur in approximately 35% of all individuals producing an architecturally weak back.

2. Clear skiagrams taken in the proper manner will reveal the presence of congenital abnormalities if carefully studied.

3. When subjected to trauma the normal spine should and usually does recover under adequate treatment.

4. When subjected to trauma the congenitally weak back returns to normal much more slowly and much less completely than does the normal spine.

5. With a definite congenital defect present if adequate conservative treatment does not result in relief and elimination of disability stabilization of the involved region is definitely indicated.

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DISCUSSION: *Dr. Earl McBride*, Oklahoma City.

I think that this is such a timely paper that we ought at least to give it some discussion. I would like to hear from you gynecologists and urologists. Each fellow has his own ideas, and there are so many causes attributed to backache that we ought to have a little more discussion. Dr. Dickson certainly extended some particular points here for your consideration, and while most of the cases I see I consider orthopedic, I am sure you men in general practice see cases that you think are not orthopedic at all. I am glad Dr. Dickson stresses the lumbosacral joint, showing that so many things happen to it rather than the sacro-iliac joint. Most of the cases that come in are referred as having sacro-iliac pain, and nearly always it seems that it is lumbosacral rather than sacro-iliac. At least in my experience the greater number has been lumbosacral. I think we should have some more discussion on this subject.

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*Dr. James C. Johnston*, McAlester.

In seeing a few of these cases by means of the X-ray, the importance of the angle at which they are X-rayed is very abundantly borne up. An angulation of  $42\frac{1}{2}$  degrees can be very clearly and definitely determined if one will sufficiently incline the tube to get a true outline of the fifth vertebra. This can be done laterally or antero-posteriorly, but you must follow the angle of the lines which determine the position of the vertebra to do that. That means more than one lateral and more than one antero-posterior. I have seen this in making pictures in our mining district there at McAlester. Naturally some of the injuries are quite old; they show up in industrial cases. Where fusion is indicated, it cleaves sharply that there must be a very secure X-ray examination so that you know you are not dealing with a sacralization already. Sacralization is one thing and fusion with the sacrum is an entirely

different proposition. One causes pain, the other should give relief. Another thing that happens is that we have the common congenital defects—these run about thirty-five percent. I was in Jobe's clinic when he made the statement that only two in seven of these cases were giving symptoms referable to back injury or back pain, but in disease, of course, the very fact of this congenital defect adds to the possibility of increased pain or aggravated condition under the slightest provocation, and particularly is that true in jackknife fractures where the patient is bent forward and there is superflexion. Not very many people say much about the late formation up of the lumbar spinous process on the intravertebral tissue. There is a thin plate of bone laid down there at about the age of 21, and this does not always occur in normal formation. Sometimes there is over-production, and we have what is often diagnosed as some form of arthritis. I have seen several plates where they tried to make it appear the result of some injury and some where the honest mistake was made of thinking it was arthritis. As this process forms, if injury occurs at this time, you get there just what you do in children where bone is in the process of formation, you get over-production. I just want to call your attention to these facts from an X-ray standpoint.

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*Dr. Smith.*

In applying casts in these cases, it is not always taken into consideration that you cannot immobilize the fifth joint by applying a cast extending from the nipple line to the thighs. You can't do that unless it is applied so exceedingly tight as to give discomfort. I wore a cast for three months, and it took me that long to find out I was more comfortable without it. If you do put these on tightly enough to secure even a degree of immobilization, it is so tight that you feel the effect before you walk one block. The cast should extend from the nipple line down to the knees.

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*Dr. Dickson:*

I am quite convinced that low back pain has so many different aspects that to attempt to discuss them all would result in a hopeless muddle, so I confined mine to rather a small specific group. In one of these cases that I saw, the patient was

sent in as a malingerer because he said he could not move his legs. He very obviously had no paralysis, the reflexes were there, he could not have any lesion of the cord of serious nature. But when you took that man and X-rayed him we found that there was a cleft in the vertebra that opened up. The motion was all taking place in this cleft. He was put up in plaster, physio-therapy started, and in four weeks he went home, able to walk and able to go to work. Next week or next month he may have the same thing over again. The man should be stabilized, but we did not feel like stabilizing him, although he will come to it sooner or later. We see a good many cases that have been handled over a long period of time. Rarely do we see an acute case. I am glad that Dr. Johnston brought out the question of Jobe's statistics. Fully fifty percent of congenital defects have no symptoms at all. They go through life perfectly normal and don't even know they have one, but the fact is, with such a weak articular structure in the joint, if the right stress comes, those are the cases that get the symptoms and don't get well. I believe as much harm is done by too prolonged stabilization as by too short a period. I believe very firmly that we have over-treatment of many cases. I will even say that I am leaning now towards leaving off plaster, putting traction to both legs and a traction band around the pelvis. You can start physio-therapy much sooner. I believe, honestly, the time is coming when plaster will not be used so extensively as now. Immediate immobilization in low back pain will very often save weeks in time of convalescence. During acute symptoms immobilize them, put them up like normal backs. When the acute symptoms are over, get your immobilization over and start your limbering-up exercises, not carrying it to extremes but gradually increasing it. I think massage and limbering-up exercises are more important than physio-therapy. It is astonishing what you can do with many of these obstinate backs which seem so hopeless. Congenital defects I am operating more and more, after proving to myself the results. I recently had a case with an interesting history—this woman while playing golf jumped from a bunker and immediately had extreme pain in her back. She came to Kansas City, and much to my astonishment I found this—there was a piece broken off of the fifth lumbar vertebra. I could not explain it; I had never



seen anything like it before. She was put to bed and apparently got well, and went along until October or November, several months later, when she again had pain in her back. We put her through the X-ray procedure again and then we found a spinal cleft. As she jumped, this fibrous tissue gave enough so that this vertebra slipped forward and all the weight came on this point. She could not have done it in any other way. She was stabilized and got along well except for having some trouble in her shoulder. Those are the type of cases that do not get well unless you stabilize.

#### ORAL THERAPY IN CONGENITAL SYPHILIS

The use of Stovarsol in congenital syphilis by pediatricians abroad induced Maxwell and Glaser to investigate the value of the therapy. The results achieved in ten cases are reported in full in the *Am. J. Dis. Child.* 43:1461-1489, June, 1932.

In four cases the Wassermann reactions were negative when treatment was begun but as the parents were 4 plus treatment was not delayed. These cases had remained negative over a period of thirteen months when reported. The other six cases had positive Wassermann reactions. Three were reversed after the first course of treatment, two at the end of the first rest period, and the other at the end of the second course of Stovarsol therapy. The results in these infants, all under one year of age when treatment was begun, are encouraging. Children over one year of age did not respond so readily.

Other advantageous features of Stovarsol therapy in congenital syphilis in infants and children as reported are; the remedy is administered by mouth, and the patients generally show improvement in appetite, general vigor and energy.

The authors believe that Stovarsol has a definite place in the treatment for congenital syphilis. Administration must always be under the direction of the physician as toxic symptoms may appear. In the majority of cases these symptoms are evidently mild in character but occasionally they may be severe.

Stovarsol is a pentavalent arsenic preparation allied to arsphenamine in its chemical constitution. It is manufactured in this country by Messrs. Merck & Co. Inc., of Rahway, N. J.

Cocomalt is accepted by the committee on foods of the American Medical Association. This food-drink is especially useful in the treatment of undernourished children and for expectant and nursing mothers. It is a scientific food concentrate produced by an exclusive process from barley malt extract, partially defatted chocolate and milk, sugar, whole eggs, flavoring and added Vitamin D. It comes in powder form, easy to mix with milk—hot or cold. So mixed, the result is a tempting, chocolate flavored food-drink—unusually high in caloric value yet easily digested and readily assimilated. Children love it. For samples, write R. B. Davis Co., Hoboken, N. J.

#### ARTHRITIS\*

FRANCIS E. DILL, M.D.  
OKLAHOMA CITY

Statisticians, commissioners of public welfare, officials in the United States public health service, have variously estimated the cost of chronic illness in this country between five and nine billion dollars yearly, depending upon whether the cost of illness alone, or associated with the loss of wage earning capacity, is considered. True it is, that chronic illness is one of the greatest causes of poverty—arthritis and rheumatic conditions certainly are a major part of chronic affections, and as such, should be, to us, comparable with tuberculosis and cancer as problems of our own generation.

The International Committee for the Control of Rheumatism, are individually and collectively attempting to elucidate some of the problems of chronic arthritis. They consider in particular the following types:

1. Atrophic arthritis — synonymous with rheumatoid arthritis, arthritis deformans, proliferative arthritis, Still's disease and Strumpel-Marie type arthritis — all of which are generally of an infectious nature.
2. Hypertrophic arthritis — synonymous with osteo-arthritis, degenerative arthritis and non-ankylosing arthritis.
3. Infectious arthritis—acute or chronic.
4. Gonorrheal arthritis.

#### PRODROMATA

The prodromata or early subjective and objective symptoms, although often easily overlooked, should by careful scrutiny, be more recognized in the future. Vague and indefinite pains in the joints especially of the hands, easy fatigability of body and mind, the overweight stocky type of individual leading a sedentary life, the thin, asthenic, ptotic, constipated individual, using to excess the faculties of body and mind, should each be more carefully examined and considered, when they present themselves with such symptoms as above.

In treating these prodromal symptoms, we should correct any dietary insults,

\*Paper read before the Garfield County Medical Society, Enid, May 3, 1932.

## 5. TUBERCULOUS ARTHRITIS

	ATROPHIC ARTHRITIS	HYPERTROPHIC ARTHRITIS	INFECTIOUS ARTHRITIS	GONORRHEAL ARTHRITIS	TUBERCULOSIS ARTHRITIS
Age	Infancy to middle life	Middle life to death	Middle adult life	Adults	Early life
Onset	Acute to insidious	Subacute to ignorance	Acute usually	Acute	Chronic usually
General health	Not robust, fatigues easily	Generally not disturbed	If chr. gen. poor; acute often shows septicemia	Healthy	Asthenic
Body type	Thin, asthenic; nervous; poor circulation, malnutrition; slow pulse, no fever, dry skin	Stocky, well built, laborers, those exposed to climate	As above	Varies	Thin
Pain, soreness and tenderness	Present but not so marked as infectious type	Slight. Usually follows slight injury, excessive strain or injury	Present early in disease	Present	Present
Joint swelling and muscle atrophy	Present	Not especially noticeable	Swelling present	Swelling present	Atrophy present
Redness and heat	Usually none	Usually none	Present	Varies	Usually none
Disability	Slow progressive	Present	Present	Present	Present
Deformity	Slow progressive	Present	Follows later	Usually none	Generally later if not treated
Joints affected	Smaller	Spine commonly	Polyarticular	Larger	Hip and spine
Etiology		Endarteritis with trauma predisposing	Foci	G. C.	T. B.
X-ray findings	Early diminished bone density. No lipping, inc. density soft parts. Late narrowed articular space. Ankylosis	Early no diminished bone density unless from disuse. Lippling of margins, no inc. of density of soft parts. Late irregular articular surfaces. No ankylosis	Late generally is some destruction or signs of bon. ankylosis	Early usually none; maybe increase in articular space.	Destruction

graduate and normalize activities by increasing or decreasing work and exercises. Demonstrable foci of infections should be treated and removed when necessary, and all abnormalities of the various systems of the body should be corrected.

## DRUGS

Especially during this present age, due to the common methods of advertising and exploitation indulged in by many manufacturers, we often are confronted with conflicting statements and testimonials regarding the value of drugs, not presented to us as such, but as the refined and improved product, generally of a complex organic or bio-chemical nature.

Salicylates, in general are good only in the acute conditions, in chronic cases associated with pain or during the time of acute exacerbations. The most common and probably most desirable form of this drug, is that of the sodium salt. It may be given twenty grains in water every three hours for two weeks after pain has been relieved, or until gastro-intestinal, genito-urinary or auditory arise. Donaldson suggests the following method, in case

there is a systemic aversion to the taking of salicylates per os. 50-100 grains of sodium salicylate, added to two ounces of a stock solution of twelve ounces of water, previously boiled with two drams of corn-starch, given twice daily as a retention enema, following the usual cleansing enema. Usually within three to seven days there occurs some deafness and ringing in the ears, when the drug is then given 10 to 15 grains three times daily in the middle of meals. This oral treatment is continued for three months and then on alternate weeks for the following fifteen months, checking urine monthly for signs of renal irritation as shown by the presence of red blood cells. It may also be given intravenously 15 to 30 grains every eight hours, often combined with an equal amount of KI, but it should be remembered that this drug is quite irritating when introduced into the perivascular tissues. Acetylsalicylic acid may be used in like manner and doses, but its lesser solubility decreases its adaptability. Cincophen, farastan and like preparations have no particular advantage over the sodium salt of the salicylates, and some men report un-



toward and serious complications following their ingestion.

Arsenic has been found of distinct value in the hypertrophic type of arthritis. Ely advises the use of neosalvarsan with doses of emetine in this type of disease. It may be given as the solution of potassium arsenite (Fowler's solution), beginning one drop three times daily and increasing one drop each day until a maximum dosage is reached, alternating with a course of iodides, with a short period of rest between each series of doses. Sodium cacodylate three grains and iron cacodylate one grain intravenously are also very acceptable forms of this drug.

Iron generally is found to be a necessary part of the drug regime, due to the secondary anemia present, and naturally is given after acute symptoms have subsided. It may be given as the syrup of ferrous iodide, 20 to 30 drops after meals. Bland's pills or Basham's mixture.

Glandular extracts are often found of value as thyroid extract combined with ovarian extract for hypertrophic arthritis, menopausal arthritis or that associated with lowered metabolism. We should not over emphasize their importance at any time, and should use only those extracts that have proven to be of distinct merit, guarding against any thyroid intoxication.

Other medicaments used and very often of value, we may consider more briefly, yet by doing so, their place in this regime, is not to be minimized. Cod liver oil, 1 to 2 drams three times daily or viosterol 10 to 15 minims daily, often are helpful adjuncts in our fight to overcome this diseased condition. Mineral oil, petrolagar, agarol, supplemented as necessary by small doses of fluid extract of cascara sagrada, are harmless laxatives. Benzoates in the form of amiodoxyl (Abbot's), 1 gram in 100 cubic centimeters of distilled water intravenously, twice weekly, has found a place with many therapists. Iodides given for their alterative action, should be best avoided in the atrophic type, for obvious reasons of a constitutional nature. Alkalis as sodium citrate 15 grains three times daily, may at times be advantageously used. Duke reports good temporary results with the use of adrenalin, in the acute articular rheumatic syndromes, possibly due to some type of allergic reactions within the joints proper. Should a specific etiological factor be shown as syphilis, tuberculosis or pernicious anemia, this

should call for special treatment. Calcium intravenously is of value in a tuberculous condition according to most authorities.

#### VACCINES

Foreign protein therapy is especially good in the hypertrophic and infectious arthropathies and in those where chronicity is marked. They depend upon their favorable action, due to the mobilization of specific and non-specific immune bodies in the system. They should produce a slight systemic reaction, *ie.*, increase of any symptom with chills and fever, and possibly vomiting, for their best results. It may be given as aolan or boiled milk, 5 to 10 cc. intramuscularly every other day—the latter probably giving the better results. Typhoid vaccine 1-10 to 1/2 minim intravenously and increasing every three days one minim, to a maximum of 1.5 cc. will give much the same result, but caution should be used in their use.

Stock vaccines may be tried when no demonstrable foci are present or when the preparation of autogenous vaccines is impossible. Best results are probably in the atrophic type and should contain at least the streptococci salivarius, fecalis and pyogenes.

Autogenous vaccines are gradually finding an important place in the treatment of arthritis. Many experimenters find that cultures taken from the blood or affected joints, offer the best hope for relief. Certainly, we expect from their use, non-specific protein reaction and depending upon whether we can find the foci of infection as the causative agent, and subsequently separate and grow the specific strain or organism, be it streptococci or staphylococci, at fault, depends possibly the specific influence to be had upon the disease proper.

Approved and recognized laboratories are necessary when this therapy is to be instituted, and furnish the necessary information to the practitioner desiring it. They are given usually in the same dosage as that of the stock vaccines, starting with one million every three to four days, then every week, increasing each dose by 25 to 50%, in short, whenever possible avoid marked constitutional reaction. These injections should be given from three to four months, and later a second course should be repeated in similar fashion.

#### PHYSIOTHERAPY

Massage is especially good in the atro-

phic type of arthritis, in order to increase the local blood supply, which is inadequate—in short there is a loss of capillary control, as shown by Pemberton and Pierce. In general, to realize the best clinical results, this should be carried on for at least four to five weeks. Combined with this, voluntary exercise on the part of the patient should be carried out, and should be combined with most of the heat treatments, save in the acute stages.

Radiant heat gives best results when used in well nourished patients, in the hypertrophic or metabolic type. It should not be used immediately after surgical operations or with weight reduction diets.

Diathermy is best used in acute arthritis and fibrositis, rather than in the chronic types. Keyting advises, in general using radiant heat for about thirty minutes, following the use of infra-red, this to be followed by diathermy for 30 to 45 minutes. Some therapists report good results when used in early menopausal arthritis.

Ultra violet and infra-red finds an important place, in that they stimulate the defensive mechanisms of the body. If a primary or secondary anemia is present, we can hope for improvement in a general way, as we must at all times keep in mind that arthritis must be treated systemically as well as locally, and that rays of sunshine combined with a dry climate cannot be greatly improved upon.

Needle spray, alternating heat and cold increase the blood supply. This may be used in the form of the common shower; should this not be available complete immersions have great beneficial action.

Colonic irrigations are assuming an important and well deserved place in therapeutics. The Schellberg irrigator apparatus is especially good, gradually filling the colon as the tube is advanced until the cecum is reached, allowing the large bowel to alternately fill and empty. Another method is to fill the colon with 1½ pints of saline solution at 102 degrees F. at 12 inch pressure. Allowing about 15 minutes for the bowel to empty, two pints of a like solution is added to the colon at 18 inch pressure. Following this introduce directly into the bowel, acidopholus or *Bulgaricus bacilli*.

#### SURGICAL

At all times deformities should be avoided and if they form, should be corrected

as soon as possible. If pain demands fixation, this should be used, always placing the affected member in the most comfortable and useful position. Any static deformities present should be corrected, and at times we find the consultation of an orthopedist most helpful. In general deformities are common in the atrophic type whereas pain in the hypertrophic type often forces on us the use of some type of fixation.

The joint proper, should always be drained if pus collects, as it commonly does in the gonorrheal type of arthritis. We may even find it necessary to open the joint and wash out with large amounts of saline. Smith-Peterson state that synovectomy is often indicated in the chronic infectious arthropathies, especially before there are bone and cartilage changes.

Auto transfusions, using 30 to 40 cc. of blood taken from the cubital veins, and giving intramuscularly, often give marked relief in the poly-arthritis and subacute conditions. Usually 5 to 6 such transfusions suffice; it has been found of little value in the chronic types of arthritis.

The removal of foci is only part of the treatment; important—true, yet not the sum total of available therapeutic agents. Even though we find some teeth extracted, look carefully for others so infected—tonsils may have been removed, yet a few tags of lymphoid tissue present may harbour a virulent type of infection. And in passing remember the gastro-intestinal tract, that men still suffer from prostatitis, and chronic urethritis, that women still have pelvic organs inviting the presence of infection.

#### DIET

The main requisites of an arthritic diet, according to Snyder are:

1. *Low caloric value.* It is often necessary to watch weight and reaction of patient carefully, adding gradually to give the minimum of discomfort and the maximum permissible energy. We must at times closely approach starvation. This lessens colonic content, consequently number of the bacteria and amount of products of putrefaction generated by action of them in feces is correspondingly lessened. In the atrophic type we increase the diet for obvious reasons.

2. *Low carbohydrate value.* Avoid potatoes, turnips, carrots, rice, beets, parsnips, as system has a physiological dysfunction



in nature of a disturbed rate of carbohydrates removal.

3. *Low protein value.* This form of food should be made up of chiefly milk, eggs, cheese, fish or red meats. Red meats are usually not contra-indicated as the blood urea and non-protein nitrogen usually is found to be normal. We should preserve the minimum protein allowance of .7 to 1 gram per kilo of body weight.

4. *Low purin value.* In short, avoid as much as possible, liver, pancreas, thymus, kidneys, sardines, herring, carp, lentils (peas and beans), squab, brains, and spinach. Cabbage, sprouts, califlower is not contra-indicated.

5. *Adequate vitamin content.* Fruits are especially good, and we should endeavor to increase the vitamin A and vitamin B intake, by the use of eggs, milk, fruits, vegetables, especially lettuce.

6. *Elasticity.* A diet must be readily adaptable to any concurrent pathology, as diabetes, nephritis, etc., that may be present.

7. *Availability.* It should be so advised to the patient, that it will be readily procurable in cafes, trains, homes, etc.

8. *Fluids.* These at all times should be forced.

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## RHEUMATICOSES\*

HUGH C. GRAHAM, M.D.  
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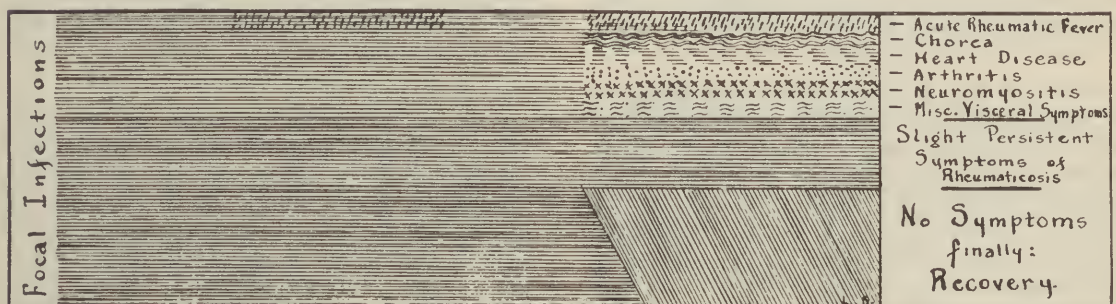
Rheumatism today is one of the dreaded diseases of any period of life. It has been very closely associated, especially in the past, with the middle and later periods of life, and, in fact, has been considered almost a heritage of advancing years. Such a view has been properly supplanted by a rational attitude toward the causative factors, especially in recent years. Two schools of thought prevail: one holding that rheumatism and its symptoms, such as aches and pains, joint changes, etc., are due to an allergic<sup>1</sup> sensitization, the result of an infection; the other holding that rheumatic symptoms are the direct result of bacterial activity or their toxins<sup>2</sup>. The study of rheumatism of the preceding several decades has resulted in one great advance: the definite conception that usually the disease has its origin in childhood, and may be definitely implanted even before school age, although positive findings may be entirely lacking or inconclusive<sup>3,4,5</sup>.

The presence of early rheumatism in childhood is not generally appreciated, except in some quarters<sup>6</sup>. The conception of adult types and symptomatology, which is quite different from that found in the early years of life<sup>6</sup>, makes the recognition

\*Read before the Oklahoma Pediatric Society, Tulsa, May, 24, 1932.

### Chart Depicting the Usual Course of the Rheumatic Syndrome.

Rheumaticosis → Sequelae



in childhood difficult<sup>7</sup>. The names applied to the rheumatism of childhood are many, and among them are found juvenile rheumatism, rheumatism of childhood, pre-rheumatic state, early rheumatic state, rheumatic diathesis, the pre-cardiac, the pre-choreic, potential heart disease, fatigue syndrome, lowered resistance diathesis, growing pains, latent rheumatism, as well as acute rheumatic fever. It is readily observed, first, that there is a play upon terms, there being no generally acceptable term; and, second, that while the manifestations and the course of the disease in childhood differ markedly from those of adult life<sup>8</sup>, yet in general the conceptions of the adult types dominate the picture found in childhood<sup>9</sup>. It, therefore, seems quite appropriate to attempt to define the rheumatism of childhood according to the newer conceptions, to indicate some of the symptomatology, and to suggest a new terminology, inasmuch as it is felt that more accurate diagnosis and better results will follow a more definite picture of the disease as a clinical entity of childhood, or as a definite phase of the disease in all periods of life.

By the rheumatism of childhood is understood the clinical syndrome probably caused by a streptococcus or streptococci and their toxins. It is either acute or chronic, but practically always chronic, is frequently characterized by no symptoms at first, and later by indefinite manifestations such as:

1. Mental or nervous symptoms: change in disposition, emotional instability, fidgetiness, inability to fix attention, "nervousness," complexes, social perverseness, mental retardation, and irritability.

2. Muscular or motor mechanism symptoms: aches and pains, "growing pains," especially of the legs, fatigue.

3. Miscellaneous symptoms: poor or fickle appetite, disordered digestion, restless sleep, enuresis, lessened muscular tone and relaxed body posture, failure to gain or poor gain in weight.

Some or all of these symptoms may be present in varying degree. As the affection progresses, they become more pronounced, and the mental or nervous group leads to failure in school, inability to co-operate properly as a social creature, limited mental accomplishments, and may but usually does not lead to chorea. In the muscular or motor mechanism group, the symptoms may progress until the aches

and pains, especially after exercise or fatigue, become pronounced and spread to the abdomen, the chest, and the head; while the fatigue may become more and more marked, ultimately resulting in dyspnea, when the myocardium is markedly affected. These cases frequently develop into heart disease and arthritis. In the miscellaneous group of symptoms, the manifestations become more noticeable, laziness and lassitude are fixed upon the personality of the individual, ambition may be noticeable by its absence, and the child will be deprived of many joys in life. As all these symptoms of early rheumatism progress unfavorably, it is seen that the end result is heart disease, or chorea, or arthritis, or other visceral affections, one or all.

Rheumatism of childhood, while it may be characterized by an acute onset, is almost always a chronic, low grade, progressive disease, and is in some respects to be compared to syphilis and tuberculosis as to chronicity and importance<sup>10</sup>. Whenever the disease is recognized following an acute onset, I believe that, if the patient has been sufficiently and carefully followed and studied before the acute onset, it would usually have been found that the affection was already present in low grade form, and the acute onset should be considered only as a flaring up of the smoldering fire<sup>11</sup>. The disease is pernicious in its course and usually does its damage unheralded, being early characterized by indefinite and unassuming manifestations, frequently evaluated as of no importance<sup>12</sup>. The difficulty of recognizing this constitutional and systemic disease, which is nearly always the result of a focus or foci of infection, has forced me to think of the causative factors as acting indolently, inconstantly, but chronically; and this has caused me to adopt a new nomenclature indicating and incorporating the newer conceptions, yet retaining enough of the old to show unmistakably the relationship of this clinical syndrome with rheumatism as a whole. I propose the following classification:

The term rheumaticosis (rheumaticosis) is chosen as the best available word: a combination of rheumatic to express the rheumatic basis and osis to indicate the low grade chronicity feature. By the adoption of this term to designate the symptom complex, attention will be partially and sufficiently diverted from traditional rheumatism, such as lumbago, arthritis,



and neuritis, to allow the newer conceptions of this affection to receive the greater degree of attention which they deserve. While it is true that there is not infrequently some real inflammatory process present in the tissue cells, as is so well known in acute rheumatic fever<sup>8</sup>, yet the characteristic is a subacute, indolent, low grade toxicosis that is all-pervading<sup>2 3 10</sup>. The essential lesion<sup>2</sup> apparently is that of a small round cell infiltration about the minute blood vessels, especially of the nervous, muscular, and osseous systems. The apparent visceral damage thus done in any tissue is very slight as compared with the usual symptoms.

For the muscular and bony systems, the terms myososis to replace myositis and osteosis instead of osteitis are proposed.

Hyman and Parsonnet<sup>11</sup> have recently proposed the use of the term myocardosis to replace chronic myocarditis. This term is especially applicable to the chronic low grade affection in rheumaticosis, and I believe the term should be generally adopted. Inasmuch as so many acquired myocardial affections, in fact, practically all such in childhood, are of rheumatic origin, myocardosis might be considered as of especial significance in rheumaticosis. Indeed, it is not at all unlikely that long before definite myocardial disturbances can be found to be present as such, the low grade toxicosis in childhood has affected to no little extent the cardiac tissues<sup>12</sup>.

Long before definite chorea has developed, the ground has been fertilized, the neurone is slowly, surely, insidiously being poisoned; and the symptoms may change from the mild to those of fully developed chorea. In order better to designate the prechoreic state, the term neuronosis is proposed. Recent pathologic investigations<sup>2</sup> seem to show that the involvement may be dilated blood vessels of the brain, proliferation of the lining of capillaries, a subacute encephalomeningitis; and one fatal case showed a definite meningo-encephalitis. Inasmuch as practically all cases of chorea pass thru a long period of development in which the nerve cells or neurones are bathed by the rheumatic toxins, the term neuronosis indicates quite correctly the underlying conditions.

Poynton<sup>2</sup> classified according to damage done 1108 cases under his personal observation who were passing through or had already passed through the stage of

rheumaticosis and in which definite lesions or organs could be accurately found, and he listed:

Carditis in 673.

Arthritis in 626.

Chorea in 617.

Sore throat and tonsillitis in 344.

Nodules in 94.

When we realize that, according to St. Lawrence<sup>1</sup> and McCulloch<sup>3</sup>, most heart disease may be prevented by proper medical care, especially in the myososis and osteosis groups, we have as weapons for its prevention the early diagnosis and proper care. Thomson<sup>6</sup> states that in England 30,000 persons die annually as a result of rheumatism, and this figure compares favorably with those for tuberculosis and cancer. In addition, when we add to that toll the great amount of untold suffering, chronic invalidism, as well as all the disturbing minor symptoms, we may realize the enormity of the problem.

While it is true that rheumatism as a whole is not receiving enough attention, it is quite true that rheumaticosis is receiving only a very small percent of this attention. Inasmuch as it is through the portals of rheumaticosis that practically all the candidates for chorea, heart disease, and arthritis must pass, lingering, for quite a period, our best weapon to reduce this mighty toll upon society is to recognize the first stage. It is my belief that such terminology as is here suggested will serve to focus more attention upon the early period of the disease.

1235 So. Boulder Ave.

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## ITS QUICK ACTION PREVENTS DEFORMITIES

No antiricketic substance will straighten bones that have become misshapen as the result of rickets. But Mead's Viosterol in Oil 250 D can be depended upon to prevent ricketic deformities. This is not true of all antiricketic agents, many of which are so limited by tolerance or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly, with the result that the bones are not adequately calcified to bear weight or muscle-pull and hence become deformed.

## THE HEALTH DEPARTMENT AND THE PHYSICIAN IN PRIVATE PRACTICE

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Reluctant as he may be to realize and admit it, one who comes frequently in contact with large numbers of practicing physicians and with representatives of local public health agencies cannot fail to see developing in many sections of the country today a more or less strained relationship between the health department and the doctor engaged in private practice. On the one hand, the physician sees, in all sincerity, the present-day activities of the health agency as the forerunner of what he visualizes as "State medicine" of the future; on the other side, this or that health officer complains of the lack of co-operation—even open hostility—of the medical profession. This situation seems all the more deplorable because of the very evident fact that most of the dissatisfaction which has arisen can be attributed to misunderstanding; and the writer of this paper cannot be honest without expressing his belief that responsibility for much of this misunderstanding, wherever it exists, can be laid at the door of the health officer himself as a result of his failure to take the local medical profession into his confidence and to request its advice and assistance in the planning and in the execution of his work. Although I myself am the representative of a public health agency, many years removed from association with members of my profession as a practicing physician, I have sufficient faith in the altruism of the doctor in private practice, demonstrated by his traditional willingness to carry, often at sacrifice of himself, more than his part of a community burden by giving without recompense his services to the unfortunate, to know that at heart he is just as much interested in the prevention of unnecessary illness and mortality as is the health officer. And experience in local health work has convinced me of the belief that whenever the health department is willing to take its problems openly to the medical profession for free discussion and to seek the cooperation of the practicing physician on an amicable basis, the whole-hearted and enthusiastic support of the doctors usually will be forthcoming.

On the other hand there is a wealth of good in the modern public health program which may result in material personal benefit to the private physician if he will forget for the moment his fear of "State medicine" and take the trouble to see for himself what the health department may do for him. I refer particularly to the demand for medical service created by school medical inspections, periodic physical examinations, diagnostic clinics, educational activities, and the like. Moreover, it is my firm conviction that the public health agency can and will be the strongest ally of the medical profession in resisting the approach of "State medicine" if you will permit the health officer to join with you in an effort to solve the problem you are now facing or with which you undoubtedly will be confronted in the future. Any trend which may be developing in this country toward "State medicine" is the result of an underlying cause far more important than the activities of the health agency. The economic situation with which the doctor is confronted is affecting the public as well. People are beginning to wonder if the burden of medical care for certain groups, which falls ultimately upon the community as a whole, cannot be made lighter by preventing the need for such care. The individual who is not an indigent but who cannot pay the price of adequate service finds himself forced to go without or to seek some plan whereby the expense of medical attention may be lessened. In all seriousness, therefore, I venture to predict that should there develop in this country a conflict over the question of whether or not medical service shall be supplied by the State or the community, the controversy will be waged not between the health department and the physician but between the public and the medical profession. Why should not the public health agency and the practicing physician, before the situation becomes more difficult, join hands in working out a solution of the problem which will meet public health needs, give the doctor an opportunity to adjust himself to preventive medicine in private practice, and provide a plan under which every individual may receive adequate medical advice and care at a cost commensurate with his ability to pay, with just compensation to the physician for his services? The health department, by virtue of its experience in dealing with problems on a community-wide scale should be particularly helpful in assisting the city or coun-



ty medical society with the development of a plan for medical service for the poor and for those who cannot afford the usual cost of medical care. On the other hand, the private physician can give material assistance to the health officer, while helping himself, by taking advantage of the ever-increasing opportunities to practice preventive medicine in the home.

In an effort to clear up some of the misunderstandings which are preventing, in certain localities, whole-hearted cooperation between the health department and the physician, I shall touch briefly on a few topics that have been particularly prominent of late as causes for difference of opinion. One point on which there has been much discussion is the question as to whether the health department should engage in general immunization activities. There has been a feeling in many localities that such work carried on by a public agency is an encroachment upon the field of the practicing physician which borders on "State medicine." In considering this question we must bear in mind that in dealing with certain communicable diseases our only means of preventing the spread of infection lies in immunizing the susceptible population. Under present-day conditions of living, attempts to control these diseases by preventing contact—by isolation and quarantine—are generally acknowledged to be for the most part futile. It is also recognized that control cannot be established unless a certain percentage of the most susceptible population group be protected. Regardless of how it may be done, therefore, it is evident that there is a job which must be done; and I believe the medical profession is just as much interested in seeing that it is done as is the health department. How the problem shall be met is a matter that must be determined in each individual community. Whatever the plan adopted may be, it should be worked out jointly between the health officer and the local medical society and have the approval of both. If the private physician will do his part by assuming responsibility for the immunization of members of families in his practice and will make reports to the health department of all individuals immunized by him, I can see no reason why the health department should not be agreeable to leaving all of this work possible to the doctor in private practice. The health department should make sure, however, that the local medical profession is fully ac-

quainted with the extent and character of the work to be done, before it permits responsibility for performance to be assumed by the physicians; and it must have assurance that such performance will be complete. The local medical profession must be willing to do something more than the immunizing of only such individuals as may seek the physician's services. If the responsibility is not to be left with the health department, it should be assumed entirely and faithfully discharged by the doctors in private practice.

The writer frequently has heard criticism of the activities of the public health nurse, particularly in respect of her work in connection with pre-natal cases. The nurse who has had proper training and who is under adequate supervision should never have occasion to overstep the bounds of propriety in her official relationship with the clientele of the private physician. Her chief function lies in bringing the patient who needs attention under the care of the doctor. It has always been my opinion that public health nursing work can be carried on most successfully and with the minimum of misunderstanding and complaint when the nursing service is operated as a part of a general health program, under the direction of a full-time medical health officer, and not as a separate or special community activity. The health officer, being a physician himself, can, if his relationship with the local medical profession is what it should be, co-ordinate the work of the public health nurse with that of the private physician in such manner that she not only will not go out of her proper field but will render material assistance to the doctor in many ways.

I have just touched upon a matter which I consider vital to the successful maintenance of a proper relationship between the health department and the medical profession in any community. I believe such relationship can be preserved best when the health officer devotes his entire time to the work of the health department and is not in competition with other physicians in private practice. He should be highly trained in the specialties of environmental sanitation and epidemiology and should be sufficiently outstanding in his knowledge of the diagnosing and control of communicable diseases to make him available as a consultant when his assistance is required by the private physician.

I have saved for the last the topic I be-

lieve to be most important of all—medical care. The time probably will come soon when we shall have progressed as far as we may go in the prevention of diseases which will yield to environmental sanitation and to control by immunization. The next important development in public health and preventive medicine must be the reduction of illness and mortality from that large and important group in human afflictions which includes heart disease, cancer, the pneumonias, diseases of pregnancy and childbirth, certain causes of infant mortality, and the like. This means that every individual must have adequate medical service and that the public must be taught the importance of seeking medical advice at the time when it can be of greatest value—before illness has progressed to the point where little or nothing can be done about it. The periodic physical examination will be the answer in part to this problem.

I do not believe the health department itself should enter the field of curative medicine, except when it may be necessary under certain special conditions to maintain clinics for the treatment of indigent persons for communicable diseases where the only means of preventing the spread of infection is removing the source by treatment of the case. It may also be desirable, especially in urban communities, that the health department maintain certain diagnostic clinics as a means of case finding and interesting and educating the public; where such clinics are maintained, however, it goes without saying that their activities should not extend into the field of treatment. But the chief function of the health department will be the conducting of the intensive and continuous campaign necessary to popularize medical advice and bring the individual who needs medical attention under the early care of the doctor. It will also be the responsibility of the health department to develop in the public mind an appreciation of the value of the periodic physical examination even though such examination from year to year may show no condition calling for medical attention. Then the physician must do his part. He must cooperate with the health department by helping to devise some satisfactory plan whereby every individual may receive adequate medical care. And when the health department has convinced the public of the value of the periodic health examination the doctor should not, as it sometimes happens, say

“Oh, you don’t need an examination; there is nothing wrong with you.” He should do his best to see that a good job is done and to convince the patient that the periodic examination is a good thing even though nothing may be wrong at the time.

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#### DRUG ADDICTION AND MEASURES FOR ITS PREVENTION IN UNITED STATES

Waler L. Treadway, Washington, D. C. (*Journal A. M. A.*, July 30, 1932), deals briefly with an epidemiologic approach to the drug addiction situation in the United States. He points out that it is a medicosocial problem of interest and concern to local, state and national jurisdictions, organizations and associations; that a public policy which treats drug addiction solely as a penal and correctional problem is not contributing to its solution; that immediate and remote causes of drug addiction bear a relation to the measures adopted for its prevention in the past, the present and those pending and contemplated; that measures for prevention demand the full cooperation and counsel of organized agencies representing the professional groups concerned, with law enforcement agencies having responsibilities in the matter; that prevention and treatment necessitate an appreciation of the psychobiologic, chemiobiologic and pharmabiologic factors involved, and that fundamental research is essential for the establishment of more accurate knowledge concerning the chemistry of alkaloids, of more reliable information respecting their biologic affects in lower animals and in man, and of a more satisfactory evaluation of the many psychobiologic factors intergrading delinquency. Basic facts on these subjects may not be established this year or the next, but systematic and scientific studies by technically trained groups of workers should pave the way to a better understanding of this and related problems. Whereas recent legislation requires that the solution of the narcotic drug addiction problem shall be largely a federal activity embracing administrative, investigative and research functions, nevertheless its medicosocial and biologic significance becomes more crystallized when these functions are imposed on the medical profession. It may be significant, therefore, that the United States Public Health Service has been designated *ex officio*, unsought as it were, the coordinator for carrying out those research functions relating to the eventual solution of the problem. In concluding this discussion of drug addiction and measures for its prevention in the United States, the author calls attention to some experiences of the past. These teach one that depraved men and women are eager and ready to raid those supplies destined for medical and scientific uses when contraband narcotic drugs are not available or are unusually difficult to procure. They will seek every means to divert such supplies from legitimate channels. The adoption of a public policy of segregating, isolating and treating drug addicts as a means of solving this potential menace to the legal supply of dangerous habit-forming narcotic drugs should serve to safeguard the interests of those professional and business groups who are custodians of these drugs.



## OCCIPITO-POSTERIOR POSITION

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In view of the fact that most of the points I want to bring out in connection with this subject can be better emphasized by illustration, I have taken the liberty of bringing a pelvis and mannikin doll along, and I am going to talk rather than read a paper.

Occipito-posterior position is an important subject for several reasons. In the first place, it is probably the most common pathological condition in labor that we encounter. In the second place, it is frequently not diagnosed early and consequently poorly managed, resulting in considerable maternal morbidity and causing many injuries to the fetus. In speaking of occipito-posterior position, of course, I mean those cases where the baby's occiput is pointing toward one or the other sacro-iliac joints. I am going to omit the etiology and start with the diagnosis.

*Diagnosis:* Up to the time that labor is well established, we get the most valuable information by making a very careful abdominal examination. You generally get a long, flat abdomen. The baby's back is generally palpable in one or the other flank and you can feel the small parts toward the front of the abdomen. The fetal heart is generally heard most pronounced in the flank. However, we must remember that where you have extension of the head, the baby's chest is quite often displaced toward the opposite anterior part of the abdomen, not infrequently transmitting the heart very audibly to that side. Another important point of the abdominal examination is the ability to palpate the frontal eminence above the pubis and toward the opposite side from the occiput. For instance, if you have a right occipito-posterior, (which is the more frequent position) you generally feel the baby's left frontal eminence to the left and above the symphysis. Your vaginal or rectal examination will not help a great deal in diagnosis until the patient is two or three fingers dilated. When that stage is reached you can generally confirm your abdominal findings by locating the fontanelles, or if necessary, by feeling the fetal ear. An important point in making your rectal or vaginal examination is the location of the cervix. A cervix which is pulled posteriorly, generally indicates an occipito-posterior position.

*Mechanism:* A few words about the mechanism in these cases. We all know that the complication of this position which accounts for most of the trouble is an extension of the baby's head. The head, instead of being flexed on the chest, is extended in military fashion. Several conditions account for this extension: (1) The baby's back is straightened out, since it lies against the more or less straightened posterior wall of the uterus, thus causing some extension of the baby's head. (2) Where there is any degree of disproportion the parietal eminences may become impinged on the posterior rim of the pelvis, causing increase in flexion. As a result of this increase in flexion, we frequently get early rupture of the membranes. (However, if we have good flexion the membranes will probably remain intact and the head will enter the pelvis without difficulty). Therefore, these labors are inclined to be prolonged with irregular pains. The occiput must rotate from a sacro-iliac position around to an anterior position. This usually necessitates good strong pains. A good pelvic floor is helpful, since rotation does not usually occur until the head strikes the pelvic floor. Our anatomists teach us that the pelvic floor runs downward, forward and inward, which forms more or less of a gutter and aids rotation.

*Treatment:* About the treatment of these positions, there is some question as to whether or not you can do anything by prophylactic measures. I believe in a few of the cases you can. Where the head is unengaged, having the patient lie on the opposite side from that on which the baby's back lies may aid nature in gravitating the baby's body to an anterior position. I believe that many of these cases can be corrected by this simple procedure. However, where the head is firmly engaged, it is my opinion that little can be done by prophylactic measures. In the early stages of labor, we can conserve the patient's strength by nourishment and prevent exhaustion by morphine, magnesium sulphate, and quinetherol. If there is any place in obstetrics where ether by rectum assumes its maximum amount of good, it is in these occipito-posterior positions. These patients should be kept in bed during active labor to prevent, if possible, an early rupture of the membranes.

Before discussing the management of the second stag of labor, let me say that in 70 to 80% of these cases, the occiput will

rotate spontaneously and labor will terminate normally. The treatment of these cases, of course, is watchful waiting, carefully observing the condition of the mother and the fetal heart. However, in a certain percentage, probably 15 to 20%, the rotation will not be spontaneous and will require some assistance from the doctor. It is these cases that I am speaking about today. So, after the cervix becomes completely dilated, and the patient has possibly been in the second stage two or three hours with very little or no progress, the mother becoming exhausted and the fetal heart undergoing changes, and we feel that some assistance should be rendered her, what are we to do? Your procedure should depend chiefly upon the station of the fetal head. In those cases, where the head is high and there is definite disproportion between the head and the pelvis, you must consider caesarean, especially if the membranes have been ruptured only a short time, and she has had practically no chance of becoming infected. Where the head is dipping in the pelvis, but still high with no definite disproportion, version is probably the method of choice. Fortunately, these cases where the head remains high are few. The majority of cases that need intervention are those where the head is in mid or low pelvis and unable to rotate spontaneously. In these cases, rotation and forceps delivery is the method to be carried out. If we can rotate these heads manually, it is always best. You simply grasp the baby's head, by the hand inserted in the vagina, and rotate it to an anterior position. In right occiput-posterior, you insert the left hand and use your right hand in left occiput-posterior. After correction, the hand is not removed until the first blade of the forceps is applied. The majority of these cases that need external aid can be rotated in this manner, however, occasionally we find one which will require rotation with forceps.

In these cases, the Scanzoni maneuver (double application of forceps) is used. This procedure has been condemned by many men and in unskilled hands may cause considerable injury. But generally in the hands of those accustomed to it, its results are brilliant and damage is negligible. Dr. Bill, of Cleveland, has laid down a few precautions which should be observed in executing this maneuver. He emphasizes the fact that the head should be rotated in the plane in which it lies, and that no traction should be exerted at

the time of rotation. Also the handles of the forceps should describe a wide circle during rotation. In this maneuver, of course, the forceps are applied with a cephalic application, therefore, after complete rotation the blades are, so to speak, up-side-down. They are then removed and re-applied as in an application for an anterior position. Other forceps used sometimes for this condition are the Kielland and the Barton. Both instruments are of interest only to the obstetrical specialist, and I will not take time to discuss their application or merits.

Before closing, I want to discuss briefly the transverse arrest. This is a condition familiar to us all and occurs most often in the funnel type of pelvis. The occiput makes an effort to rotate but becomes arrested with the sagittal suture running transversely. In these cases, where manual rotation is unsuccessful, a cephalic application should be used and the head gently rotated to an anterior position. In a few of these persistent posterior cases, the occiput, instead of rotation anteriorly, will rotate into the hollow of the sacrum. When artificial help is indicated, I believe it is better to lift these cases out with the forceps, with the occiput remaining posterior. Epiosotomy is helpful in these conditions.

In conclusion, I just wish to stress the thought that the proper management of these cases depends upon: (1) Careful study and individualization of each case. (2) An early and accurate diagnosis. (3) Good judgment as to when to render artificial aid. (4) The course and skill to execute that aid when indicated.

Thorough familiarity of this common anomaly will do much toward elevating the plane of obstetrics into a more scientific art and will undoubtedly materially lessen untold suffering, fetal mortality, and maternal morbidity.

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DISCUSSION: *Dr. M. B. Glismann*, Okmulgee.

Dr. Lowry has made a most excellent presentation of this subject. Many will say that if you put your hand in to rotate you are just as liable to make it worse as



you are to improve the condition, that you are liable to get the head out of place worse than before you put your hand in. Dr. Lowry says he does a great many things; he may put his hand in and hold that head in place and while that hand is holding the head in place, then he takes the other hand and puts on the forceps. He can probably do that. Men who practiced in the days of yore can tell you that cases of transverse arrest or where the head rotated into the hollow of the sacrum, these were looked upon as lamentable conditions, and they looked upon it seriously. I would like to ask some of you grey-headed obstetricians, in the twenty-five hundred or three thousand cases you have probably delivered, how many times in this condition have you gotten in serious trouble. During the forty years you have been practicing, have you experienced serious trouble? Is this a common condition, I take the position it is not. I take the position that many of these cases—and he says seventy-five percent—probably in more than that the rotation is spontaneous and terminates normally. Each one of these cases has to be treated individually. I would say as far as position is concerned, to lay the woman on the side opposite to which the occiput points, I believe there is a great deal of bunkum connected with this. I do not believe there would be much mechanism in favor of what we are trying to do. We have all these ideas and conceptions of this position and we don't look upon it as seriously as of yore. We have seen too many heads come through in many different positions. Of course we know this is an abnormal condition. This is pathology. If the three biological stages, the first stage of labor, the second stage of labor, and the third stage of labor, if these always worked harmoniously no woman or child would ever die. We wouldn't have any mortality of either mother or child. We would be in fine condition. This mechanism of labor does work harmoniously many, many times. The doctor only needs to interfere, as Dr. Lowry interferes, when he has to interfere. Why, then, does the mother or child ever die? If this mechanism works right, if the biological mechanism is perfect in its action, absolutely perfect, we say that labor is physiological. Christian Science people are wont to say that all cases are physiological, but we know that is not true. But in cases where it failed, why did that mother die or why did that child die? There are three causes; purely obstetrical

causes which are many, pre-existing diseases in the mother, which are many—many women marry and try to have babies that should not try—and accidents. Now, these things occur and this is common of those conditions that become pathological on account of a purely obstetrical condition. It is a purely obstetrical condition that makes this pathology and we have to handle this pathological condition in the best way possible. Forceps should be applied but they should be sparingly used. If not sparingly used you bring that occiput down and make your case worse. Every case is an individual case and you have got to start slowly. We find them in all stages. As Dr. Lowry said, we can generally have very strong indications that we have occiput-posterior by manual examination, not by the examination, we make in the vagina, but by the abdominal examination we make. The biological change of three labors works perfectly anyway ten or fifteen times in a hundred. These cases are all physiological. Nature, way back yonder, knew that there would be purely obstetrical causes, it knew that there would be pre-existing disease in the mother, and knew that accidents would occur that could be avoided by reason or our certain way and certain mechanism of labor. We have a care-chain composed of three links—pre-labor care, natal care, and post-natal care. Dr. Lowry tells of his care in the first stage of labor or the second stage, or the third stage, and he carefully examines that patient and carefully does what is necessary. That is why our mortality is not going to be great. The old grey-headed man has found that if he had a hundred of these cases, in less than one-fourth of them has he needed to interfere. When we have to deliver by forceps with the head in posterior-occiput it seems cruel not to make a large episiotomy. We ought to make it long enough for the head to come through. I suppose all grey-headed men in their experience have been mortified at times by not making that free incision to make plenty of room for the head to come through.

*Dr. J. A. Hatchett, Oklahoma City.*

There is no set rule for handling these cases. Every case is an individual case.

*Dr. R. B. Gibson, Ponca City.*

The knowledge of the mechanism of labor that Dr. Lowry exhibited here shows that he is not going to have much trouble with his occiput-posteriors. That is the secret in handling these cases; you have

to have your knowledge of the mechanism of labor down to a fine point, then you will be able to individualize your case, and as Dr. Hatchett has brought out, there is no set rule. Anybody who always uses a certain method or who always does a version is going to have a good percentage of failure. In the prevention of these cases, however, I don't think we will accomplish so very much in trying to prevent those by having the patient lie upon one side or the other. They don't pay much attention to what we say. By instructing them to have a bed pillow, having a pillow under the side, the flexion will draw that baby's back toward the front oftener than any other case. As to what procedure to use, when the membranes are not ruptured and you haven't a contraction ring, I prefer to use version. If you have a contracting ring around the head and the membrane has been ruptured and the waters escaped, you cannot accomplish a version as successfully, however, that all depends on your experience in doing the version. I suppose we will always have trouble with our occipito-posteriors, but the sooner we do come to the point of individualizing them and not depending upon any one particular method of treatment, the sooner we will have less trouble. *Dr. E. P. Allen, Oklahoma City.*

As a rule occiput-posterior occurs in patients who have an abnormal pelvis to start with. Dr. Dickson gave us some very good instances of abnormalities in obstetrics, and that is what we get in a lot of these cases; their pelvis is just not exactly normal. We have no further time to go into that. There are two indications for forceps—first the mother and second, the child. Take a mother unable from exhaustion or disease or any other cause, and where the child is concerned, if the head has been there so long your heart is all wrong, if you don't deliver it you are going to lose your baby. Some points to remember in forceps delivery are those, completely dilated cervix; the bag of waters must be ruptured; head in mid-pelvis or lower; there must not be too much disproportion. If your disproportion is too great you lose your patient. You must diagnose your pelvis. If your pelvic inclination is wrong and the baby tries to come down in the wrong incline it will be difficult to handle. The thing we must start to do is to diagnose the abnormal inclination of the pelvis and diagnose disproportion, and then we will know better how to handle

the case. We will know what ought to be done and know where forceps can be used. This can be determined by X-ray and study of the pelvis.

*Dr. Lowry:* I enjoyed the discussion very much. I have nothing further to add.

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#### PROLAPSE OF RECTUM

Edward G. Maitin, Detroit (*Journal A. M. A.*, July 30, 1932), presents the following classification of prolapse of the rectum which was determined by the extent or degree of the prolapse and the sequence of its development: First degree: internal or "concealed" prolapse; invagination of (sigmoid) pelvic colon into rectum; ptoses of pelvic colon. Second degree: rectum is protruded through anus. (A perianal sulcus is present; the anus is not involved). Third degree: prolapsed colon, rectum and anus (no perianal sulcus present). Complete anorectal prolapse. Procidentia. Partial or mucous prolapse. (Commonly seen in childhood). In the operative treatment the pelvic colon is pulled up until the rectum is taut and is fixed there; this cures the prolapse. Occasionally some supplemental repair may be desirable. The author describes the technic of colon fixation thus: A left rectus incision extending from the pubes to the umbilicus is made with a high Trendelenburg position. Assisted by a self-retaining retractor, the small bowel is packed off, exposing the colon, which is pulled up taut and quickly tied in position to determine the exact and relative location of the proposed fixation. The general location of the left ureter, mesial to the psoas major, should be borne in mind. The psoas minor, which is a tensor of the iliacus fascia and has some mobility, makes an excellent location for the fixation, the tendinous portion being used. The iliacus fascia is more commonly used with no particular advantage other than it is always present and accessible. A 3 or 4 inch incision is made through the retroperitoneum and areolar tissue over the site chosen for fixation, the tendon or fascia being exposed. A number 1 chromicized gut suture is first placed through the longitudinal band of the colon, a little below a point where it is then to be inserted into the psoas minor or the fascia of the iliacus, and left untied. Four or five sutures are then placed about one-half inch apart in relative positions. When the first or lower suture is tied it pulls the colon up and in approximation to the exposed fascia; the other sutures are then tied successively. The lateral or outer edge of the peritoneum is sutured lightly over this fixation area to the colon, a fine needle with fine plain catgut being used, thereby covering all raw areas. It has been found unnecessary to suture the mesial edge of the peritoneum to the intestine since it is an apposition to it after the fixation sutures are tied. It has also been found unnecessary to denude the colon at the area to be fixed. The usual abdominal closure completes the operation, and routine postoperative-care is given with the patient in bed for at least ten days. A daily saline enema with evacuation in the recumbent posture is suggested for thirty days.



## AGRANULOCYTIC ANGINA WITH REPORT OF FIVE CASES

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The disease which Schultz' of Germany first called to our attention in 1922, by a report of several cases and which has been usually referred to as agranulocytic angina should more properly be named granulocytopenia according to Kracke<sup>2</sup> because it "is expressive of the true essential pathology, since it actually designates a decreased number of granular cells, whereas the term agranulocytosis refers to an increased number of cells without granules." Many of these cases occur without the sore throat or angina so this term does not always describe the condition so should be discontinued. "Idiopathic neutropenia" and "malignant neutropenia" are other terms that have been proposed for this disease.

Kracke is also of the opinion that prior to Schultz's description of this condition, "it was rare, for had it existed in large numbers many years ago, it would surely have been described, because of the ease of diagnosis, definite clinical picture and its dramatic and fatal course." He further states that nearly 500 cases have been reported. Yet Skiles<sup>3</sup> in the Journal of American Medical Association in 1925 says in an article on this subject, that a case reported by Lovett<sup>4</sup> in the same journal in 1924, "as far as is known is the first case reported in America." So you see we were either overlooking many of these cases or they were not here in the numbers we now see them. The fact that this condition was described and given a name has also probably caused cases to be reported which otherwise might have been considered just an unusual case.

The onset of the disease as observed in the cases to be reported was usually sudden, with chills and fever. Sore throat was present in every case and in four of the five patients it was the chief complaint. Ulcers were present on the tonsils, pharynx, tongue and gums in practically all of these patients. Marked prostration and weakness was also noted. The white blood count was greatly reduced with the granular cells being almost if not completely absent. Four of the five patients were females who according to the literature are more susceptible than males to this disease. Three of the five patients

showed a marked anemia. Two of the patients had prolonged menstrual bleeding and one had severe nasal hemorrhage. None of these patients had been in good health previous to the sudden onset of this condition, a fact which has been observed in many of the cases reported by others.

Smears from the throat and gums showed the different organisms usually found in these locations—namely streptococcus, staphylococcus, pneumonia and Vincent's organisms. One blood culture showed large gram positive bacilli possibly due to contamination, the other cultures all remained sterile.

As to treatment used in our cases, all of the patients received transfusions of citrated blood, several patients receiving repeated transfusions. Mercurochrome was given intravenously to one patient and another patient received repeated roentgen ray treatments over the long bones. None of the treatments seemed to affect the progress of the disease. All of these five patients died, death occurring in from two to twenty-eight days after the onset.

The diagnosis of this condition of course can only be definitely made after a study of the blood but with the symptoms complex of the typical case—sudden onset with chill, fever, sore throat, ulcerations of the mouth and throat and usually marked weakness, one should at least suspect this disease. In the atypical cases without the angina one might more easily overlook the condition but with patients as sick as these patients are a complete blood study is something that should surely be done.

Aplastic anemia is one disease that might be difficult at times to differentiate although in this condition there is an aplasia of the bone marrow as a whole: while in agranulocytic angina only the white cell forming elements are affected except in the terminal stage when both the red cells and the platelets are usually reduced.

The treatment most commonly used in cases reported in the literature has been blood transfusions. Friedman<sup>5</sup> of Germany reported a number of recoveries after using roentgen ray treatment over the long bones; foreign proteins have also been used in an effort to increase the white cells. Some of the patients apparently make a spontaneous recovery. That the treatment is far from satisfactory is evidenced by the high mortality rate which

Dameshek and Ingall<sup>6</sup> estimate at least 90% in the reported cases.

Henry Jackson, Jr.<sup>7</sup> and his co-workers of Boston have apparently given us something of great value in the treatment of this disease in pentose nucleotide. Jackson demonstrated for the first time the existence of this substance in the normal human blood in 1924. "It exists principally in the nuclei of the living cells." They have used it intravenously in twenty cases with fourteen recoveries. They state that "the evidence for the effectiveness of the nucleotide in conditions of acute or sub-acute leukopenia rests in the uniform, prompt reaction on the part of the blood, the uniform and prompt fall of temperature and the consistent healing of mucous membrane ulcerations."

The etiology of this disease is not known but according to Kracke, "some type of toxic agent attacks the myeloblastic tissue of the bone marrow, this in turn decreasing the output of granulocytes, resulting in loss of the resistance conferred by these cells, and in terminal infection of varying severity." "Kracke and Roberts carried out daily blood counts on a patient for seventy days who had had two previous attacks and demonstrated changes in the blood stream four days before the clinical onset. The day preceding the attack the white blood count was 900 with no neutrophils though the patient felt quite well. The next day the attack came and she died two days later." Kracke says he thinks it may be safely assumed that the disease is primary in the blood-forming tissues of the bone marrow and that infection is a subsequent but not a necessary part of the picture.

Certain poisons such as arsenic, benzol and thorium may produce a blood picture similar to that seen in these agranulocytic angina cases.

#### CASE REPORTS

Case No. 1. Z. A., a 16 year old white girl, entered the University Hospital on July 8, 1929, on the nose and throat service. The admitting history and examination are as follows:

**Chief complaint:** Sore throat, one week's duration. The patient had a high temperature and appeared to be very sick.

**Physical examination:** Limited to the throat because patient was too ill for further examination. The right tonsil was enlarged and reddened with pus exuding from it. The left tonsil was enlarged but did not appear inflamed.

**Impression:** Peri-tonsillar abscess, right.

The complete history obtained later is as follows:

On June 30, 1929, (nine days before admission to the hospital) patient suddenly became sick with fever and chills. The throat was sore and swollen, the pain being worse on the right side. She spat up blood at this time. One week before she had also spat up blood. She continued to have fever since June 30th. She had cramping spells when the hands, arms and feet would draw up in flexion. For the past three days she had been vomiting, at times, projectile. On July the 6th, the abscess ruptured and pus ran out of her mouth and nose and she felt better for a short time. One doctor who saw her said it was diphtheria and gave her antitoxin. This patient died sixteen days after entering the hospital.

While in the hospital patient's right tonsil remained ulcerated with ulcers also developing on the uvula and mucous membrane of the cheeks. The lips were dry and swollen. She had slight uterine bleeding during most of her illness. Petechial hemorrhages into the skin occurred practically over the whole body, some of these hemorrhagic areas being elevated.

The red blood count ranged from 2,650,000 down to 1,090,000 and the white blood count 4,100 with 44% neutrophils, 40% L. L., and 6% S. L., myelocytes 6%, transitionals 4% down to 700 white blood count with neutrophils 8 and S. L. 92.

On about the seventh day in the hospital the red blood count and the white blood count reached their highest count, and at the same time the temperature dropped to normal for the first time. She had this normal temperature for two days when the temperature again reached 104 and 105 where it was during most of her illness and when the temperature became elevated it was noted that the red blood count and white blood count was again low.

This patient was given four transfusions of citrated blood, and one injection of 15 c.c. of 1% solution of mercurochrome intravenously. Repeated blood cultures were negative. Smear from the throat showed gram negative diplococci predominating.

The post-mortem by Dr. Hugh Jeter showed the following: Gastro-intestinal tract grossly negative except that here was scattered petechiae in the mesentery and black pigment which is evidence of old hemorrhage scattered throughout. There was only one kidney which was horseshoe shaped. There was two ureters which appeared to enter the bladder in an equal manner. The lymph glands and spleen showed congestion. The bone marrow showed an absence of myelocytes and polymorphonuclear type cells.

Dr. Jeter's conclusions were that both gross and microscopic examination of tissues indicate an acute toxic condition involving the spleen, lymph glands and bone marrow to a considerable degree, such as might be the result of any severe grade of toxemia.

The pathology is in keeping with the description of the cases reported of agranulocytic angina.

Case No. 2. White boy, age 13 years, admitted to orthopedic service at the Children's Hospital on July 19, 1930. Patient became sick in December, 1927, with pain in the right hip, radiating to the right knee, accompanied by limping; tubercu-



losis of sacro-iliac joint. X-ray evidence of bone production and destruction in the right acetabulum, no definite X-ray diagnosis.

On July 21, 1930, the patient developed pain in the second and third toes of the right foot and second and fifth toes of the left foot which showed marked inflammation and tenderness. Patient stated he had never had a similar attack before this but had had pain in the calves of the legs and in the wrists. White blood count on this date was 8,400 with 74% N. On August 30, 1930, the notes stated that the temperature had been normal for the past four days. Patient seemed greatly improved. Did not complain of much pain, wrists and ankles still swollen.

On August 6th, patient was seen by Dr. Geo. Garrison of the pediatric department in consultation because of redness, swelling and tenderness, and pain of several toes, the left wrist and hand. Condition at this time thought to be acute multiple arthritis, apparently of unknown etiology.

Treatment suggested: Immobilization of the wrist with heat locally, salicylates, urinalysis and white blood count ordered. The white blood count was 14,700 with 76% N.

Patient seen again on September 22nd by the pediatric department in consultation because of painful joints of the feet. At this time there was marked enlargement of the liver with tenderness, slight swelling of the feet with extreme pain on pressure but none on active motion. A loud systolic murmur was heard over the entire precordium and laterally to the axilla, very loud also in the 2nd I. C. S. Border of the heart definitely enlarged to the left, mild infection of the gums present—advised examination for Vincent's. Condition at this time thought to be a flare up of old infection perhaps rheumatic fever. The temperature was now 104, smear for Vincent's was negative.

On September the 24th the patient was seen by myself in consultation because of sore throat. The right tonsil showed a large cavity filled with dirty gray membrane, very foul odor to breath.

Impression: Streptococcic infection.

Smear from the throat showed predominating organism to be short chain streptococci. On September 26, 1930, the red blood count showed 1,250,000, hemoglobin 30%, white blood count 1,700, N. 20, S. L. 68, L. L. 14. Blood cultures remained sterile. The patient died on September 28, 1930. The temperature was slightly elevated during most of his stay in the hospital, it ranging from 103 to 105 during the last six days of his illness.

This boy had been sick for several years prior to his admission to the Children's Hospital with a provisional diagnosis of tuberculosis of the sacro-iliac joint. While in the hospital he developed what was apparently an acute rheumatic fever from which he was still suffering when he developed the sore throat and the neutropenia to which he succumbed in a few days.

Case No. 3. Mrs. F. L. G., an employee of the University Hospital was admitted to the University Hospital on the medical service of Dr. A. B. Chase. Chief complaints being, sore throat, headache, backache, chills followed by sweats, weakness.

Admitting examination: A well developed and well nourished white female, age 41, temperature 100.6, pulse 84, head negative, eyes react to light and accommodation, nose and ears negative to external examination, mouth shows several carious teeth, throat—tonsils removed, pharynx reddened; neck-cervical lymph nodes markedly enlarged and tender, thyroid was palpable, chest apparently clear, heart not enlarged, abdomen negative.

Impression: 1. Rheumatoid infection, 2. Influenza.

Patient stated she had not been entirely well for about a year. Had had a tendency to nervousness and weakness and she had been bothered some with sinus infection.

On October the 3rd, I answered a nose and throat consultation on this patient and noted the following: nose—no evidence of sinusitis; mouth—gums red and swollen; tongue—had a small ulcer on the tip and on the left side; throat—tonsils removed, there was an ulcer of the pharynx behind the left post-pillar.

Impression: Vincent's angina.

A blood count reported later the same day showed: red blood count 3,850,000, hemoglobin 75%, white blood count 1,250, N. 45%, S. L. 55. A check count showed white blood count 1,350, N. 45%, S. L. 55 and another count later on the same afternoon showed white blood count 1,500, N. 40%, S. L. 60%, Wassermann negative.

On October 4th, the blood showed white blood count 4,120,000, hemoglobin 80%, white blood count 1,240, N. 35%, L. L. 10, S. L. 47. On October 5, white blood count 600, recheck showed 550, N. 4%, S. L. 90%, degenerated cells 67. On October the 6th the white blood count was 300, N. none, S. L. 100. On October the 7th, white blood count 150, lymphocytes and some degenerated cells. On October the 8th, the red blood count had increased to 5,000,000, the white blood count 775, N. none, L. L. 22, S. L. 70, degenerated cells 8.

This patient was given three transfusions of citrated blood, 400 c.c. on October 5th, and 500 c.c. and 300 c.c. on October the 6th. This patient also received a number of treatments of roentgen ray to the long bones. Note: On October 9th, 1931, the ulcerations on the tongue, pharynx and gums were more marked, swallowing difficult.

Patient died ten days after admittance to hospital, the transfusions apparently increasing the red blood count but having no effect on the white blood count. Smears from the gums and throat showed staphylococci predominating. Blood cultures showed large gram neg bacillus. Wassermann negative. No autopsy obtained.

Comment: This patient when admitted to the hospital did not impress one as being in a serious condition but in ten days she was dead. Repeated transfusions had no effect on the white cell count. This case is another typical one of the so-called agranulocytic angina cases, also another one of these cases that had not been in good health previous to the onset of this condition.

Case No. 4. Mrs. L. L. White female, age 52, entered University Hospital on March 26, 1932, at 10:30 a. m., on the medical service of Dr. A. B. Chase. Chief complaints being: Diabetes, weak-

ness and tired feeling for two and one-half weeks. The day before entering the hospital she had a high temperature and began complaining of sore throat. Condition grew progressively worse and a physician was called who sent her to the hospital. This was the third admission of the patient to the hospital. She was first admitted because of a hyperglycemia and a large carbuncle on her back; the second admission was because of gangrene of the right great toe. Patient had not been taking insulin.

**Admitting notes:** Well developed, extremely well nourished white female, appears toxic, complains of sore throat and difficulty in swallowing. Respiration labored, pulse full and rapid, patient very restless and in extreme discomfort. Blood pressure 180-60. Throat—fiery red with patchy areas of exudate over tonsils. Tonsillar and peritonsillar region swollen. General examination was not done because patient was too sick. White blood count upon admission averaged 700, polys none, S. L. 90%, L. L. 10%, red blood count 5,050,000, blood sugar 400 mgm. Urine showed heavy sugar, diacetic acid and acetone. Another white blood count done that afternoon showed 450 cells, polys 1, degenerated cells 4, S. L. 89, L. L. 6.

At 8:00 p. m. the day of admission 300 c.c. citrated blood was given. The patient developed some inspiratory stridor and she was seen by Dr. L. C. McHenry who made the following notation: "Patient had a dirty membrane on each tonsil with edema of the uvula, palate, lingual tonsils, epiglottis, and aryepiglottic folds. There is inspiratory stridor with very little obstruction at 8:45 p. m., and the vocal tone was fairly sharp." He suggested sedation and tracheotomy if laryngeal obstruction occurred or got worse.

This patient died at 12:25 a. m., on March 27, 1932, about fourteen hours after admission and was mentally clear up until a few minutes before she died.

No autopsy obtained.

This patient is another one with a chronic illness, diabetes, who was taken suddenly ill and the chief complaint was sore throat and difficulty in swallowing, who died two days after the onset of the disease. The blood picture being typical of that seen in these cases.

Case No. 5. O. L., admitted on the nose and throat service at the University Hospital on February 7, 1932, because of severe nasal hemorrhage which had begun thirty-six hours previously.

**Examination:** Patient was a well nourished and well developed, anemic girl, 17 year old. She appeared acutely ill, showed air hunger and was extremely weak. Both nose and throat affected, dirty grey ulcers on the tonsils and pharynx, also the uvula. Bleeding from the anterior and posterior nares. Onset of illness began about eighteen months ago when patient contracted lues. Shortly after this she began taking shots of neosalvarsan and had had about 30 of them at weekly intervals. About two months ago the patient developed a laryngeal condition which so affected her voice that she could hardly speak above a whisper. There were ulcers on the tonsils and on the throat for which she was treated. A few days before entering the hospital she had a hemorrhage from the throat and thirty-six hours before entering, the nasal hemorrhage began. For

two months she had been getting gradually weaker and more anemic. Had been menstruating for the past two weeks. The nasal hemorrhage was controlled with anterior and posterior nasal packs. Dr. Wann Langston made the following notes on this patient. "Patient extremely anemic, history of profuse bleeding from naso-pharynx and previously prolonged menstruation. Yet the anemia is not the post-hemorrhagic type, but aplastic as evidenced by the almost total absence of reticulocytes. There is also a marked reduction in thrombocytes. This probably was responsible for the bleeding. It was noted that the vein opened for transfusion did not close by thrombosis. There was a marked depression of granulocytes also, in other words there is almost a complete suppression of all myeloid functions." "The problem is whether the lesions in naso-pharynx are syphilitic or due to the blood dyscrasia; or whether the blood dyscrasia may be due to excessive anti syphilitic treatment."

The red blood count on admission was 850,000 with 40% hemoglobin. The following day the red blood count was 1,500,000 and hemoglobin 32%, the white blood count was 1,400, N. 32, S. L. 66, L. L. 2. On the third day in the hospital the red blood cells were 1,590,000, reticulocytes 0.2%, platelet count 9,540, white blood count 650, N. 10, S. L. 80, L. L. 10.

On the sixth day the red blood count was 1,860,000, platelets 8,980, white blood count 280, N. 8, S. L. 80, L. L. 16. She died on this day.

This patient was given four transfusions of citrated blood and 10 c.c. of calcium gluconate intravenously.

This was a case which had had a great deal of treatment with neosalvarsan and the red blood count, the platelets and the white blood cells all showed a marked decrease and should possibly be classified as an acute plastic anemia.

According to the literature some patients develop a blood dyscrasia after only a few treatments with the salvarsans and the blood picture may be that of agranulocytic angina, purpura hemorrhagica or acute aplastic anemia.

These cases were all patients at the University Hospital and I wish to express my appreciation to Dr. H. Coulter Todd, Dr. A. B. Chase, Dr. Wann Langston, Dr. T. G. Wails and Dr. Charles Rountree for permission to report these cases which were on their services at the hospital.

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## NEW CONCEPTS OF LIVER FUNCTION—REPORT OF A CASE OF PRIMARY CARCINOMA OF THE GALL BLADDER

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New concepts and new ideas flow into the medical literature with ever increasing abundance. Of all the organs to submit themselves to the scrutiny of the research student, the liver has been the most hesitant. Now, however, surgical technique has become so perfected that even that organ is losing its impregnability, and its functions are being investigated by the laboratory worker, roentgenologist and the clinician.

The liver is an integral part of the digestive and metabolic system, in close association with the gall bladder and pancreas. In the three mm embryo<sup>1</sup>; a small longitudinal groove appears in the abdominal cavity. The endodermal cells of this groove proliferate and form a solid mass superiorly and a hollow tube on its inferior aspect. Constriction appears between the intestine and the rapidly growing structure, and we find that solid portion becoming the liver and the tubular portion dividing into the gall bladder with its cystic and common ducts.

The blood supply of this highly vital area becomes differentiated, resulting in two hepatic arteries, a right and a left, to supply the liver parenchyma, with the cystic artery coming from the right branch. The blood supply is also made up of a portal vein, which collects the blood from the intestine, pours it into the liver by two tributaries, a right and a left.

The lymph channels of the liver and the gall bladder, with those of the stomach, drain into the celiac group. The lymph channels of the duodenum and the pancreas also drain into this area.

The cellular structure of this area is comparatively simple. In the liver we find parenchyma cells, cells of the biliary system and reticulo-endothelial cells of Kupffer.

The comparatively simple structure of the liver may explain, in part, its regenerative ability. It has been repeatedly shown that in a dog, 65 to 70% of the liver can be excised and in two weeks normal weight and volume will be regained; and in six weeks normal histology. Repeated

excisions do not produce evidence of hepatic insufficiency.

This question of regeneration depends on certain factors, and one of these is an unhampered circulation. Mann<sup>2</sup> of the Mayo Clinic was able to show this in his experimental work, and he was also able to prove that the right and left tributaries of the portal vein do not anastomose. Thus he has shown us that there is a bilaterality of the liver, and that it is divided by an imaginary line from the gall bladder fossa to the entrance into the inferior vena cavae of the hepatic vein. No longer is the liver divided by the falciform ligament. We are no longer dealing with a single organ. Other workers<sup>3</sup> have gone farther and have shown three stream lines of the portal blood—that from the stomach and spleen going to the left portion of the liver; that from the upper part of the duodenum pancreas and head of the jejunum to the right, while the blood from the colon was carried to all parts although mostly to the left lobe. All the portal blood system intermingles with the biliary system in close relationship.

Mann<sup>3</sup>, by the use of a reverse Eck fistula, was able to continue his study on the liver. He noted that dogs, whose livers had been removed, remained normal for a few hours, then began to develop muscular weakness and flaccidity. In about an hour, reflexes returned, became exaggerated, muscular twitching developed, then convulsions, vomiting and death.

When the urine and blood were studied there was found a progressive decrease of sugar, increase of uric acid to a large amount, increase of pigment and the appearance in the urine of a yellow flocculent pigment. The increase of uric acid was not manifested clinically.

When glucose was injected intravenously, the dog would recover for a while, even though he were in convulsions. This could be repeated several times before the animal lost all ability to recover.

Similar experiments were tried on a depancreatized dog, and the same symptoms developed as in the dog where the liver alone had been removed. If liver and pancreas were removed at the same time the hypoglycemia of the liver complex developed and predominated the picture. Insulin merely hastened the hypoglycemia and the demise. The glycogen in the muscles was merely a change to lactic acid.

Evidently the glycogen of the liver alone can be changed to blood sugar.

Hence we see the further importance of the liver in the control of blood sugar level, and it seems directly responsible for the recovery of the blood sugar level, even so the hypoglycemic action of insulin is distinct.

#### RELATION OF LIVER TO PROTEIN METABOLISM

We have known that the liver plays a large part in the metabolism of protein. Mann, in his experiments, has been able to show that when the liver is removed, the formation of urea ceases. The amount of uric acid present in the body increases to high concentration. When the common duct of a dog is ligated, protein appears in the urine'. Liver perfusate shows allergic reaction to this protein. Thus showing that the urinary protein is due to some liver deficiency.

The absorption of degenerating liver quite certainly does produce a toxic reaction experimentally. Portions of liver, when dropped in the peritoneal cavity produced death in eighteen to twenty-four hours. After a period of intense toxemia showing (1) a fall of concentration of serum in plasma; (2) an increase in coagulation time; (3) an increased amount of serum and uric acid in the blood. This was questioned by workers who thought death was due to a peritonitis, caused by an organism simulating *B. Welchii*. No organisms, however, were found. When pulverized autoclaved portions of liver were put in a chest and in an axilla, the picture of intense toxemia with the blood changes mentioned developed<sup>6</sup>.

#### LIVER IN REGARD TO JAUNDICE AND CALCIUM METABOLISM

The idea prevailed for years that the Kupffer cells on the reticulo-endothelial system had much to do with the formation of bile. However, no satisfactory explanation has been given for the hemolytic type of jaundice which developed when the biliary tract is apparently normal.

It has been shown that the removal of the liver, spleen and intestinal tract does not stop the formation of bile; hence it is believed that the bile is really made in the bone marrow and merely stored in the Kupffer cells.

The liver does have an important part to play in the metabolism of bile because dogs with a common duct ligated gave a

direct reaction to the Van der Bergh; but after hepatectomy, the reaction became indirect. Bile salts themselves can be injected much in excess of concentration seen clinically, and they will not produce any symptoms of jaundice<sup>6</sup>.

The blood calcium is not changed perceptibly in jaundice although there is evidently some upset in its metabolism. Too weak concentration of calcium evidently had some physico-chemical action and caused a type of cloudy degeneration with seepage of protein into the urine. The changes in the coaguability of the blood may be due to the upset in calcium; this in turn may be due to the change in fibrinogen but we do not feel convinced of the part fibrinogen plays in the process of coagulation of the blood.

#### LIVER AS A DETOXIFIER

The action of the liver in excreting heavy metals, for example, mercury and some alkaloids and strychnine, etc., is known. It may have many other properties in this line that we do not know much about at present.

#### LIVER FUNCTION TESTS

It is impossible to test the function of an organ when we do not thoroughly understand those functions. Most of these liver function tests have been unsatisfactory. The phthalein dyes are much favored by some clinicians. Galactose may be useful if the theory that it is stored immediately by a sound liver, is correct. In time, tests that can be successfully used by clinicians will be worked out, but at present none are satisfactory for the practitioner.

#### LIVER IN RELATION TO CLINICAL CONDITION

Thus far discussion has been mostly of experimental work. Now we shall consider liver function in relation to definite disease entities.

When liver treatment of pernicious anemia was first brought out, a skeptical attitude was taken by many men. It was not known just why liver substance seemed to help. This has been shown to be due probably to a vitamine E and the iron which fresh liver carries, and which is also present in the liver of pernicious anemia subjects. Pernicious anemia may be merely a form of scorbutic anemia. A crystalline salt has been isolated which can produce remission in pernicious anemia. It does seem peculiar that the extract



of stomach should be also efficacious in pernicious anemia.

We have shown how the liver seems to have something to do with the control of blood sugar level in depancreatized dog—a fatty degeneration of the liver takes place in seven to twenty-four months, probably due to the inability of the liver to metabolize the fat.

#### LIVER IN GALL BLADDER DISEASE

In spite of the vast amount of work done on this problem we are still very much at sea. One thing is certain, and that is that the liver does become affected in any long standing disease of the gall bladder system. Patients, who have had a long standing pathological condition of the gall bladder sometimes react in a definite manner to gall bladder surgery. After an operation these patients exhibit symptoms somewhat similar to the reaction seen after a total hepatectomy in dogs.

In a study of causes of death following gall bladder surgery, fifteen<sup>10</sup> cases of this type were found. Much of the clinical study of this condition has been done by Heyd, and he differentiates the reaction into three sub groups. Group 1: Patient does not entirely react from the anaesthetic but gradually passes into a coma with a gradually ascending temperature. Group 2: Generally occurs in a patient with jaundice. The immediate postoperative course is satisfactory, then they show excitation, going into coma and death. Group 3: Comes on twenty-four to thirty-six hours after operation and simulates shock. It too, is fatal.

In all these cases, the preoperative study is normal; but the postoperative study shows a gradually developing hypoglycemia, an increasing blood urea nitrogen and uric acid. In most cases there is an upset of the carbon dioxide confining power of the blood, resulting in either an alkalosis or an acidosis. No evidence of pneumonia, peritonitis or meningitis have been found in any of these cases, even after blood culture, spinal tap and post mortem. Various causes have been suggested, for example, cholangitis; interference with the right hepatic artery. It has been considered that the relief of biliary pressure has acted like the sudden relief of intravesical tension when too speedy decompression has been done on a distended bladder, with consequent renal collapse. The lymphatics between the gall bladder and liver are open, and this may allow for

an absorption of disease or chemically altered liver cells or toxic bile.

One condition which would seem to predispose to such a postoperative reaction is the long standing biliary infection, which has been complicated by carcinomatous involvement. Much attention and publicity have been given the carcinoma of the uterus, etc., but little to carcinoma of the gall bladder because it has been considered comparatively infrequent in development. However, this is not the case. Graham, who considers that almost sixty percent of people who some time or other in their life have cholecystic symptoms, gives the following statistics:

Buday	Postmortem	5,330	Cancer	336
Bejact	Postmortem	6,808	Cancer	692
Redlich	Postmortem	5,002	Cancer	496
Von Berencsy and Von Wolfs	Postmortem	19,908	Cancer	2,314

During 1925 and 1926 in the United States 10% of cancer deaths were due to cancer of the gall bladder or nine per 100,000 of population.

Previous cholecystic disease seemed to predominate in these cases, and especially calculi being found anywhere from sixty-nine to one hundred percent of cases of primary cancer of the gall bladder. Some series of statistics indicate that anywhere from four to fourteen percent of the cases of cholelithiasis will if untreated, develop cancer. The moral is obvious and should do much to help settle the problem of cholecystectomy versus gall bladder drainage, either operative or nonoperative.

#### REPORT OF CASE

The case I have to present is that of a woman, Mrs. C. Y., referred by Dr. J. C. Marshall and treated in the Sisler Hospital. Patient, age 63; two children; had typhoid fever age 18; normal menopause; had estivo-autumnal fever in September, 1931, verified by smears. Patient had been having attacks of pain diagnosed as "gall bladder attacks" for almost fifteen years. She had never been jaundiced and her general health had been good. In the two to three weeks previous to her admission to hospital she had developed an inordinate appetite, eating six good sized meals every day. It is interesting to note that in dogs, whose bile has been entirely sidetracked from their digestive system, will develop the same condition. In spite of this increased appetite she had lost five to six pounds in the corresponding period of two weeks. Pain had become constant with relief only slightly by opiates, and was steadily becoming much more severe. Examination showed marked tenderness and rigidity over the right upper quadrant. There was no jaundice. Other examinations were normal. Blood pressure 120-65. Red blood cells 4,190,000. Hemoglobin 80%. Urine normal. Icter index and blood sugar and urea were within normal limit, with no evi-

dence of acidosis. Temperature, pulse, respiration, etc., were normal. Due to the increasing severity and constancy of the pain with the gradual loss of weight, malignancy was suspected by the referring doctor.

Operation revealed a liver that was slightly enlarged and with an increased congestion. The gall bladder was shrunken about two inches in length and collapsed under the border of the liver. The cystic duct was small, twisted and friable (normal diameter one-eighth of inch). The common duct was also friable and shrunken. There were many adhesions of increased firmness and several lymph glands were palpable. The aspect of the gall bladder adjacent to the gall bladder fossa was thickened and hard and slightly widened. There was an area of infiltration about one inch in diameter and one-eighth of inch thick, lying next to the liver. The portion of the gall bladder in proximity to this area was also very much thickened and gray. A calculus the size of and shape of a date stone (three-quarters by one-eighth inch) was imbedded in the cystic duct and had practically obliterated this structure down to its opening into the common duct. The appendix was enlarged and cystic. It was felt that the patient had entered upon the last stage of the disease and that pain, even under opiate, would be unbearable if nothing was done. Removal of gall bladder was decided upon. This really meant a removal of gall bladder and cystic duct. By careful dissection the gall bladder with its infiltrated area was removed. The cystic duct was separated from the common duct. The common duct had to be divided at its junction in order to insure complete removal of the gall bladder and cystic duct. The hard, friable common duct was anastomosed with difficulty. The bile seen in the operative field was watery, gray and very thin. The liver showed no gross evidence of metastasis. Stomach and duodenum seemed normal. Patient had ether anaesthesia. Her condition during the operation was good and there was no evidence of shock postoperatively.

The patient reacted normally to the anaesthetic, peristalsis returned in the usual time, and there was no evidence of pneumonia or delayed shock, acute dilatation of the stomach or intestinal obstruction. The patient showed a gradually ascending temperature with no remission, 101 up to 106° F. while the pulse did not rise proportionately. The patient's mental state gradually became dull, going into a mild delirium and then into coma. Jaundice was absent. Urinary secretion diminished. There were no findings of acidosis. Fluid and dextrose were given intravenously but they did not seem to affect the picture in any way. Patient died the third day postoperative in a coma with temperature 106° F. and pulse 130.

Several factors; the ether anaesthetic, the widespread dissection of the biliary tract, and the manipulation of the common duct plus the age of the patient and the duration of her symptoms had an important bearing on the subject, but none of these can explain fully the clinical picture.

A postmortem examination was denied. Pathological examination of tissue removed showed a mucocele of the appendix and a primary adenocarcinoma of the gall bladder.

#### CONCLUSIONS

(1) Need of further clinical study of

the relation of the liver to body function. (2) Importance of the recognition of the frequency of primary type of cancer of the gall bladder. (3) Necessity of exhaustive examinations, clinical and chemical of all patients suffering from gall bladder disease.

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5. Mason E. Cetal—Journ. Lab. & Clin. Med. 1925: X, 662.
6. Andrews, Schlegel and Thomas—Surg. Gyn. & Obst., 1928, XLVII, pp. 179-182.
7. See 2.
8. Rowntree, Greene & Aldrich—J. Clin. Invest., 1927—IV, 545.
9. Whipple—Am. Journ. of Med. Sci. 179:628—1930.
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#### FOCAL ENLARGEMENT OF TEMPORAL BONE AS SIGN OF BRAIN TUMOR

Ross H. Thompson, Philadelphia (Journal A. M. A., July 30, 1932), records and discusses two instances of external prominence of the squamous portion of the temporal bone in children, directly overlying an intracranial tumor and not due to hyperostosis but to bulging. In each, the occurrence was sufficiently early to furnish the principal evidence of the presence and localization of the growth. In one case the tumor was of meningeal origin and had no buffer between it and the thin squama directly overlying, which according to roentgen microscopic evidence was invaded by tumor cells and thereby increasingly weakened. The dura adherent to the bone pinioned the tumor to the skull vault and created a tendency to limit direct pressure outward and inward in the immediate neighborhood. Inward pressure on the optic radiation would account for the left homonymous hemianopia. Outward pressure would account for the thinning and bulging of the bone. Pressure internally and above in the direction of the internal capsule would account for the pyramidal tract symptoms. The growth probably slowly decompressed itself by a gradual formation of the lump. The absence of symptoms and the improvement in the optic neuritis one year before admission probably were due to the increased cranial capacity occasioned by the bulge, although the latter was not discovered until one day before admission. In the other case the tumor did not arise from the meninges. It was of deep origin and was shown by the ventriculogram to have shifted the lateral ventricles and midline structures to the left in the direction of the opposite squama. The total lack of observable neurologic changes may thereby be accounted for by the giving way of the right squama, and also by a slighter degree of bulging of the left squama, thus creating an enlarged intracranial capacity by an increase in the cranial diameter between the two squamae.



## A NEW FIELD OF ACTIVITY IN MEDICAL PRACTICE

CARL PUCKETT, M.D.  
OKLAHOMA CITY

In meeting the unusual conditions confronting physicians at this time we believe they will welcome something new that may be used in the practice of medicine. What we have to suggest is an old procedure, not heretofore widely used in general practice for various reasons, some of which are given below, modernized and made practical; and with this suggestion is presented a new, or improved product, standardized until its usefulness and dependability is unquestioned. Such a product has recently been perfected and its use holds forth an opportunity for good results as an aid in early diagnosis. We refer to the new tuberculin, MA100, now available to the medical profession after years of study and research by the National Tuberculosis Association assisted by various scientific bodies, individuals and biologic firms. This is a tubercle bacillus protein. It is prepared in four types, human, bovine, avian and timothy.

Tuberculin skin tests in some form have been used almost as long as we have had tuberculin. Gradual improvement has been made throughout in its use as a diagnostic agent. The intradermal test is the approved method and largely used to the exclusion of the Pirquet method. The former is called the Mantoux method and used the same as the Schick test for diphtheria, with interpretation of the reaction in forty-eight hours. This new tuberculin is used after the Mantoux method. It is sensitive and selective and has no severe reactions. It is an excellent first step in locating children with any tuberculous activity, those who may have later disease though quiescent at time of the test and for excluding those cases wherein no infection may be shown. Below is given the comment concerning this new tuberculin in "Tuberculosis Abstracts" for August, 1932.

"Old Tuberculin discovered by Robert Koch in 1890 is a mixture of the bouillon and all metabolic products of the tubercle bacilli grown on it. Greater precision of the tuberculin test is highly desirable and for this a more specific and less variable testing substance is necessary. The chemistry of the tubercle bacillus has for some years been studied by investigators selected by the Research Committee of the Na-

tional Tuberculosis Association, of which William Charles White is chairman. One of its results has been the isolation of a protein, which is designated as MA100. This substance causes the typical skin reaction in persons infected with tubercle bacilli. To test the reliability and practicability of it a study was carried on cooperatively by a number of workers. An analysis of the results is reported by Mariette and Fenger in the March 1932, American Review of Tuberculosis."

Since this new tuberculin is now available it is our hope that physicians will use it. In the state program of tuberculosis control and prevention, the public is being told about the new diagnostic serum. Physicians will be asked about it and often will be called on to use it. There should be remuneration both in the test and the after-care necessary when positive reactors are found. When there is any suspicion on the part of parents of danger to the health of their children a check-up is likely to be desired, especially in such a dread disease as tuberculosis. And where findings are negative, after two or three tests, parents will feel very grateful to the physician who can give this positive information.

All contact children should be tuberculin tested as well as all suspicious cases. According to reliable statistics there are nine active cases of tuberculosis to each death, or about 11,000 cases in Oklahoma; and three contacts to each case, or 33,000 that should be checked. Most of these are children. Physicians can find these in their practice. It is largely a matter of looking for them, and using the tuberculin MA100. It is not treating folks ill with tuberculosis as physicians have been accustomed to seeing adults. But it is finding the children who have the infection within their bodies, usually quiescent, and taking the steps necessary to prevent active disease later.

The problem of tuberculosis control and prevention has been largely one of education of the public. First it was a matter of education as to the value of rest and sanatorium care, breaking the contact of the well with the sick and building resistance. All of this has had the support of the medical profession. But since the treatment of tuberculosis was preeminently a sanatorium problem and the fact that the chronicity of the disease pauperized most of the patients, usually adults, it has not been a source of much income to physicians. Hence they have not given tuber-

culosis the attention accorded other ailments of humanity. But now that the diagnosis of tuberculosis in its pre-active stage is possible through the skin test and X-ray, especially applying to children, physicians in general practice will find this an excellent field of activity at a time when there is someone to pay the bills.

Education of the public will continue to be the program of tuberculosis associations. Results will now tend toward a greater dependence on the family doctor. This is particularly our aim. In our demonstration clinics in cooperation with local physicians where the tuberculin test is made, aimed to interest the public in diagnosis of tuberculous children, the patient is referred to the family physician for interpretation of the reaction and whatever follow-up is necessary. We believe this program of early diagnosis and prevention of active tuberculosis belongs to practicing physicians, with whatever assistance may be necessary by public agencies. Yet with the great strides recently made in possibility of early diagnosis of tuberculosis physicians are not giving this much attention. The reasons have been stated. It should be different now as we are attempting to show. But the public wants to get rid of the menace of tuberculosis. Unless the medical profession manifests an interest in this 33,000 potential cases among whom many are able to pay, some form of free clinics will be eventually started. Then we will hear much about "State medicine." It is our purpose to refer these cases to practicing physicians and we hope free clinics will never be necessary.

The intradermal skin test with MA100 should be used in all tuberculosis contact cases among children and in any case as a matter of elimination where diagnosis is difficult. If it is used in all children many unsuspected cases will be discovered. Then a search for the source of infection would be the logical course. Often it is found to be a servant in the home; or a grandparent with a chronic cough not suspected as tuberculous. And, more important, it may be a parent. The usefulness of the tuberculin test is indicated when it is realized that children do not show a positive reaction except where they have been in intimate contact with tuberculosis, as in the home, over a considerable period of time. In these children the proper procedure is removal of source of infection, correction of physical defects if any, rest, sunlight and wholesome food. Even where the con-

tact cannot be entirely broken a knowledge of the danger will aid greatly in preventing further infection.

The skin test is not so useful in adults because a large percent of all show a positive reaction. However, since the severity of the reaction may help to determine the amount of infection the test may aid the physician, who is not a specialist in chest diseases, in early diagnosis of suspected cases or to eliminate tuberculosis from consideration where a mild or no reaction is shown. Therefore the use of the new tuberculin should be more of a routine of the practice of medicine.<sup>2</sup>

Below are given some statements from authorities to sustain the argument as to the practicability of diagnosis and treatment of the childhood type of tuberculosis. Opie: "We know that, within certain limitations, latent infection can be recognized and its intensity measured by well understood procedures. . . . A better understanding of how the disease behaves during its period of latency points the way to the prevention of its more harmful stages." McPhedran: "The diagnosis of tuberculosis in its latent or pre-clinical stage is entirely a practical procedure." Austrian: "The number of young individuals exposed to the risk of tuberculous infection that will develop clinical tuberculosis is relatively small if contact with the source of infection is removed, and good conditions of hygiene and of diet are established."

The childhood type of tuberculosis should prove to be a useful and remunerative field of the practice of medicine. The ability to diagnose a latent or pre-clinical condition, as most of these cases are found to be, is an evidence of professional skill. It will appeal to the parents and friends of these young patients.

1. The Oklahoma Tuberculosis and Health Association, 22 West Sixth Street, Oklahoma City, will mail the August Abstracts to any physician on request. This contains description, findings, and conclusions concerning MA100. With this will be mailed a mimeographed bulletin "Childhood Type of Tuberculosis" which describes methods of procedure and interpretation of reaction in the tuberculin test. This Association also has some educational films for the public that may be shown in picture shows, one of which outlines the procedure in diagnosis of tuberculosis in children, including the skin test. Another film is an excellent health comedy.

2. This new tuberculin is available through Mulford Biological Laboratories. Parke Davis and Company are also mentioned, by the authors of the article from which the August "Tuberculosis Abstracts" are taken, as participants in this research so no doubt this biological house has or will have it for sale. It is prepared in one c.c. ampoules; one-twentieth c.c. is sufficient for a test according to manufacturers. The tuberculin may be kept in a refrigerator over a long period of time and drawn out as required under usual aseptic precautions. A one c.c. tuberculin syringe is recommended for making these skin tests.



# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### "KEEPING UP WITH SALLY"

Gentlemen of the oleaginous voice extol the virtues of their new offerings. As proof of the efficacy of their product they cite the enthusiasm and results of Doctor ———, who treated, probably six cases of some well understood self limited diseases as proof of its fitness.

Ask them. Have your compounds been offered to, and examined by the Council on Pharmacy and Chemistry of the American Medical Association? Beware of the compound or offering which has not had their investigation and favorable

report. Remember this type of product has enormously decreased in the past fifteen or twenty years, however, there remain far too many, and certainly the physician, personally, has no time or means to properly investigate them, and their use is practically an experiment on his patient. Formerly the rear end of most drug stores was filled to overflowing with one to five gallon mixtures, most of which should have been dumped out in the sewer, or their constituent, if needed, should have been prescribed by the physician, that is, if he knew his "oats." The doctor depending upon the ubiquitous "detail man" to tell him of the wonders of this and that, has a poor fountain of information to say the least. This, of course, does not apply to the representatives of many well known high class pharmaceutical houses, none of which would think of putting on the market a preparation without the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

#### READ YOUR MEDICAL JOURNAL

And read from cover to cover. You will note that many advertisers change their copy monthly and have something worthwhile in the way of a message for the physician. We have a supicion that a certain percent of our members do not read their Medical Journals, unless they happen to be especially interested in some one or more particular articles. This is a mistake, for our writers nearly always make an attempt to so frame their articles that they will appeal to the general practitioner, and this is the correct attitude for the mass of Oklahoma physicians do general work and are not specialists. In the back end of the Journal is a directory, containing the list of officers, delegates to the American Medical Association and members of various committees. Notwithstanding this we constantly receive letters wanting information which that page carries monthly. This is rather proof positive to us that some of our members do not read their Journals. It may interest our readers to know that articles published in the Journal of the Oklahoma State Medical Association are rather widely abstracted. One of the most scientific publications in the United States finds the articles meritorious enough to abstract several each year. Our abstracts are very carefully selected and some of them are unusually worth while. The members who

fail to read the Journal will overlook something worth while to himself.

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### TREATMENT OF FRACTURES ON THE SPOT

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A railroad surgeon once told the writer that one of the best handled cases that had ever come into the hospital came in with a piece of picket fence as a splint. This was a fracture of the femur. Fractures of the long bones should be immobilized and extension applied in some manner at the earliest possible moment, for contraction of the muscles produce an overlapping which is often difficult to overcome and in certain fractures there is great danger of moving bone ends producing very severe injury to adjacent vessels and nerves. For these reasons fractures should be given all the immobilization and extension possible at the earliest possible moment. One of the most useful appliances, when properly applied is the Thomas splint and its various modifications. The Thomas splint often means miles of relatively easy travel for the patient, whereas other types of dressing may or may not only get the end desired but produce excruciating pain on the part of the patient. We believe that as time goes on, and due specially to the severe economic condition that many fractures are going to be treated at home. There seems not much reason why most fractures should not be reduced at home, reduction and maintenance of position retained by an occasional visit of an intelligent physician or surgeon.

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### COUNTY SOCIETIES — REORGANIZE AND GET TO WORK

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The backbone of a fairly hot summer is broken, and people, including doctors, feel better, therefore now is the time for every County Society and group of physicians in the State to meet, laying out their work as far as possible, taking advantage of the rapid progress that is being made in medicine and surgery and make the County society generally worth while.

The writer is, and always has been opposed to arbitrarily assigned subjects of papers to members of the county societies. The writings of physicians should be voluntary, thus they should bring out those things in which the physician is most intensely interested. A meeting with no papers whatever, but a general discussion

of cases, their symptoms, course of the disease and final termination is more worth while than a paper gotten up by arbitrary assignment from a physician who has little or no interest in the subject.

We have pointed out before that it is not necessary to have a large number of physicians present to have a useful meeting. We have also called attention to the fact that there are scores of high class, unusually well informed physicians, surgeons and specialists in other lines located in Oklahoma. These men are always glad to attend, upon invitation, medical meetings, and their services should be utilized. Only in this way may the general practitioner keep up to date.

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### OKLAHOMA CITY ANNUAL FALL CLINIC

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The third annual fall clinical conference of the Oklahoma City Clinical Society will be held in Oklahoma City October 31, November 1, 2 and 3 with twenty-one distinguished leaders in the medical and surgical fields as guest lecturers, according to Dr. Henry H. Turner, director of clinics.

Although attendance at conventions and conferences has shown a tendency to slump this year, sponsors of the conference, through provision for a greatly enlarged program, expect the 1932 meeting to show an attendance increase. Invitations have been sent 12,000 doctors throughout the middlewest and southwest.

The program, which will include daily general assemblies, one hundred hours of post graduate work, two night symposia, daily round table luncheon conferences, scientific and commercial exhibits and an elaborate schedule of entertainment, has been arranged so there will be no confusion among registrants desiring to attend particular courses.

The conference will be operated on a strictly non-profit basis. The registration fee will be ten dollars and will admit registrants to every event of the four-day conference schedule. Those desiring to make advance reservations for the function should address the director of clinics, 319 Osler Medical Building, Oklahoma City.

The annual clinic dinner, with Dr. E. H. Cary, Dallas, Texas, president of the American Medical Association, as speak-



er, will be held the second night of the conference. Symposia will be held the first and third nights on "Urology" and "Industrial Surgery," respectively. Dr. Hugh Young, Baltimore, and Dr. LeRoy Sante, St. Louis, will conduct the symposium on "Urology." Dr. E. G. Brackett, Boston, and Dr. Henry H. Kessler, Newark, will conduct the symposium on "Industrial Surgery."

Because of their productiveness in past years, round table luncheon discussions, presided over by guest lecturers, will be extended twenty-five minutes in length this year to last an hour and forty-five minutes.

Complete list of distinguished guests may be found on page five of the Journal.

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### **Editorial Notes—Personal and General**

DR. J. HUTCHINGS WHITE, Muskogee, has returned from a visit to Rochester, Minnesota.

DR. A. M. BUTTS, Holdenville, who has been ill for the past several weeks, is reported improving.

DRS. C. B. AND PAULINE BARKER, Guthrie, have returned from three months spent in Europe.

DR. LEILA E. ANDREWS, Oklahoma City, has returned from Santa Monica where she spent the past month.

DR. AND MRS. S. N. MAYBERRY, Enid, have returned from Alexandria, Minn., where they spent the summer months.

DR. AND MRS. ARTHUR W. WHITE, and son, Oklahoma City, have returned from a two weeks vacation in Duluth, Minn.

DR. AND MRS. E. S. FERGUSON, Oklahoma City, have returned from a motor trip to the northern lakes and their farm near Port Stanley, Canada.

DR. F. W. HENDERSON, Tulsa, who has been ill with appendicitis is improving and will return from Salt Lake City, where he was vacationing when stricken.

GRADY COUNTY MEDICAL SOCIETY met at the home of Dr. Martha Bledsoe, Chickasha, September 15th. A chicken dinner was served and the society was addressed by Dr. J. M. Postelle, Oklahoma City, on "Colitis."

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met September 13th at Norman, at the Central State Hospital. The following program was given:

8:00 A. M.—Golf, Norman Country Club.

10:00 A. M. to 12:00 noon—Ward Walks and Clinics.

(A) Manic and Schizophrenic Reactions—Dr. J. J. Gable, C. S. Hospital; Dr. J. L. Day, C. S. Hospital.

(B) Organic Brain and C. N. S. Conditions—Dr. Carl T. Steen, C. S. Hospital; Dr. Chas. R. Rayburn, C. S. Hospital.

(C) Endocrine Dyscrasias—Dr. Chas. R. Brake, C. S. Hospital; Dr. Ben H. Cooley, Norman.

#### Luncheon

1:00 P. M.—Veterans' Cafeteria, Hospital Grounds.

#### Dinner Addresses

Address of Welcome—Rev. Forney Hutchinson, Oklahoma City.

Response—Dr. B. H. Burnett, Duncan.

"Doctor's Day"—Dr. A. J. Weedn, Duncan.

Remarks—Dr. C. R. Hume, Anadarko.

Address—Dr. D. W. Griffin, Superintendent Central State Hospital, Norman.

Quartet—Drs. Tom Lowry, Dick Lowry, Francis Deland, and L. J. Starry.

#### Scientific Section

2:30 P. M.—"Results in the Treatment of Advanced T. B."—Dr. Horace Reed, Oklahoma City.

Discussion—Dr. Phil McNeil, Oklahoma City.

2:50 P. M.—"Infantile Diarrheas."—Dr. Ray Lindsay, Pauls Valley.

Discussion—Dr. J. M. Gordon, Ardmore.

3:10 P. M.—Business session—House of Delegates.

3:20 P. M.—Scientific Section—"Obstetrical Problems Arising in The Pre-Natal Period."—Dr. Roy E. Emanuel, Chickasha.

Discussion—Dr. J. B. Miles, Anadarko.

3:40 P. M.—"Ringworm of the Feet."—Dr. Darrel G. Duncan, Lain-Roland Clinic, Oklahoma City.

Discussion—General.

Address—Dr. G. N. Bilby, Commissioner of Health, Oklahoma City.

4:40 P. M.—Golf, Norman County Club

The Auxiliary entertained the ladies at the home of Dr. and Mrs. W. D. Griffin.

CADDO COUNTY MEDICAL SOCIETY met at the new Anadarko Hospital, Friday, August 26, 1932.

The Anadarko Chamber of Commerce served 7:00 o'clock dinner to all doctors present.

#### Program

1. General Diagnosis of Tuberculosis—Dr. L. J. Moorman, Oklahoma City.

2. The Diagnosis of Disease of the Gall Bladder—Dr. Lea Riely, Oklahoma City.

3. The Community Hospital as an Educational Center—Dr. Wann Langston, Oklahoma City.

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#### WOMAN'S AUXILIARY

The Women's Auxiliary is better organized than ever before. The local organizations have nearly all started their work for the year. Among the most active are Tulsa, Oklahoma, Pittsburg, Pottawatomie and Choctaw counties, the last be-

ing the latest organization, or what you would call a baby organization.

The Women's Auxiliary in Oklahoma City engaged in work last year for the Crippled Children's Hospital. They completed two hundred garments for the children, prepared fifteen scrap books ready for the cut-outs and completely finished fifteen scrap books. Four dozen scissors were also bought and sent to the children. Auxiliary members also donate a day or more each month to Red Cross service.

During the year a shower of baby clothes was sent to the City Nursing Bureau for welfare work. At Thanksgiving and Christmas, baskets of food and clothing were sent to several needy families. The Oklahoma County Auxiliary consists of ninety-seven paid-up members and nine honorary members.

#### DOCTOR JOSEPH MITCHELL HANCOCK

Dr. J. M. Hancock, fifty-five years of age, former Chandler pioneer physician, was killed instantly August 22nd, in his office in Tonkawa, when he came in contact with an X-ray machine while treating a patient.

Dr. Hancock was born at Sulphur, Kentucky, September 25, 1877. He graduated from the Louisville Medical University, Louisville, Kentucky, and started the practice of medicine in that state. He came to Oklahoma in 1902, settling in Kendrick.

Later he moved to Chandler, which had been his home up to within two weeks of his death. Dr. Hancock was a veteran of the Spanish-American war and World war.

Funeral services were in charge of the Masonic Lodge, American Legion and Veterans of Foreign Wars. Burial was in Chandler.

Dr. Hancock is survived by his wife, a daughter and two sons.

#### THERAPEUTICS AND MEDICINE

Robert L. Levy, New York (Journal A. M. A., July 30, 1932), believes that one cannot separate art from science, and that art, in the sense of skill in application, should not be given special consideration in relation to medicine. As Swift has phrased it, "no artist can be very eminent without knowing the fundamentals of his art. The fundamentals of medicine rest in the science of medicine." Therapeutics may be regarded as the foundation on which was built the superstructure of medical science. Certainly, therapy is an integral part of medicine, and any scheme that aims to divorce these two retards the development of both. The therapeutic aspect of medicine concerns itself with all the procedures that may modify the natural course of disease. Such procedures are commonly carried out with the idea of alleviation or cure. But often the study of the effects of various manipulations throws valuable light on the phenomena of disease itself. Investigation in therapeutics is obviously essential for progress, and the rules for conducting

it are the same as those which are applied to the pursuit of any other scientific problem. In therapeutics there is especial need for comparative experimentation in order to establish beyond question the relationship between cause and effect. When imperfect knowledge still prevails, empiricism in practice is permissible. But it is to be sanctioned only until the scientific method of examination by means of experiment has afforded either justification or condemnation. Not only the methods of therapeutic approach, but the individual case, must be considered in the light of scientific experiment. Each patient presents a problem differing from that of every other patient because of the individual idiosyncrasies that are inherent in living organisms. It is, accordingly, sometimes necessary to follow the method of trial and error. But of one thing the physician should always be convinced in his own mind, namely, that the remedy tried will not be harmful. The desire to help inspires action. Yet not infrequently misdirected therapy, though well intentioned, causes more damage than would result from failure to interfere with nature's plans for repair. In the management of human beings, personal relationships must inevitably play a prominent role. Consciousness on the part of the patient that his physician is thoroughly grounded in the principles of his profession favors the development of a receptive and cooperative state of mind. But this is not enough. The qualities that enter into the make-up of the personality, many of them only remotely concerned with scientific attainment, often exert a dominant influence. It is the combination of intellect and character that defines the therapeutic artist.

#### CLINICAL SIGNIFICANCE OF VITAMIN D IN INFANCY AND CHILDHOOD

According to Frederic W. Schultz, Chicago (Journal A. M. A., July 30, 1932), a nation-wide propaganda emphasizing the importance of vitamin D in proper growth and development of the animal organism and calling attention to the sources from which it can be made available has seized on the popular imagination to an almost unbelievable degree. There are comparatively few infants or children now who are not receiving cod liver oil in some form or are extensively exposed to solar or other forms of radiation. One cannot escape the feeling that a somewhat similar criticism is warranted with regard to the use of light as a source of vitamin D. In an excess of zeal the public has seized on all forms of radiation with an enthusiasm that has reached almost alarming proportions. There is considerable evidence, both in the experimental animal and in the human subject, that light can be harmful if used to excess. All clinical evidence seems to show that excessive use of light in any form can have effects quite the reverse from those anticipated or desired. A return to a more moderate use of this potent agent and remarkable source of vitamin D would seem to be reasonably indicated, at least until its potency can be more accurately measured than is now possible. Vitamin D is one of the indispensable essentials of the growing animal organism. This knowledge and its widespread use has already resulted in much good. The incidence of rickets, formerly so large, has been diminished to a remarkable degree and with it the complicating features which directly or indirectly were so large a result of this disorder and contributed in large measure to infant morbidity and mortality.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Gonococcal Pyelonephritis.** Jenner G. Jones, St. Joseph, Mo. *Journal Missouri State Medical Association*. July, 1932. Page 297.

The author cites a case, male white, aged 23 with symptomatology dating back sixteen months which went to nephrectomy and was proven to be gonococcal pyelonephritis. Diagnosis was arrived at pre-operatively through a cystoscopic study.

Gonococcal cystitis is rare, and even more rare in gonococcal pyelonephritis, he states that the belief is that it is a hematogenous infection. It is very rare to find the gonococcus in the kidney pelvis in pure culture, it is most often found associated with colon bacillus or the staphylococcus. He calls attention to the fact that a simple urinalysis made does not rule out infection of the upper urinary tract. Geisinger in *Journal Urology* 25:649, 1931, demonstrated that the drainage of pus from an infected kidney through an indwelling ureteral catheter is intermittent over a period of hours. In doing cystoscopic examination and the finding of gonococci it is often believed that this is a contamination from the lower urinary tract, this should be ruled out by repeated examinations.

**Treatment of Heredosyphilis.** F. J. McCauley, M.D., Newark, N. J. *Journal of the Medical Society of New Jersey*, April, 1932.

This article should be read by every physician who attempts to treat syphilis, and especially syphilis in children, heredosyphilis.

The author censures those men who try to divide clinically and therapeutically those types of lesions caused in syphilis, he says they are caused by the same organism, and the results are similar. Some may show early manifestations, some not until puberty or after, still the therapeutics is the same. Pregnancies in an untreated mother may result in repeated abortions a few times, but finally due to her defensive mechanism the disease becomes so attenuated that a live baby is born. Because these mothers have been treated during the past few years in the large cities, more varied lesions are occurring in the offspring at birth. Syphilis of the recurrent stage or latent syphilis without clinical manifestations as gummatous and degenerative lesions. The majority of the heredosyphilis seen today does not correspond to the old description. The author states the prevention is the first thought, a blood Wasserman in the earliest stages of pregnancy should always be done. All infected pregnant women should be treated as early as possible, and continuously throughout pregnancy. Any woman known to have had syphilis should be treated continuously throughout her pregnancy despite her

blood reaction. We can never say that this particular woman is cured, and if such a woman is constantly under treatment while with child the offspring will not be infected. He raises this question, a healthy baby clinically and serologically negative, but whose mother is known to have had syphilis, should the baby be treated. He states that this question should be answered, yes or no, because this baby either has or has not latent syphilis. He decries the idea of treating such patients for one or two courses depending on the Wassermann, for if the patient has syphilis a little therapy will do much harm, insure a further tardive case and disguise symptoms. He states in considering this question of treating the baby; if a pregnant woman had an infection five years previous to conception, received early and well prescribed treatment, had been under proper treatment and observation since, and had received treatment all during the term of pregnancy this offspring may be considered a healthy non-syphilitic baby and no treatment need be given.

Under the following conditions treatment should be given and the full regime maintained over a course of years. 1. The baby of a mother who has had a fairly recent syphilis regardless of her treatment, this baby should be treated as an undoubted syphilitic. 2. If there is any doubt as to efficacy of treatment given mother formerly, this baby should be dealt with as syphilitic. 3. If the syphilitic infection is discovered in the mother after pregnancy takes place the child should be treated as syphilitic. An ideal treatment would insure a clinical cure with little mental and physical distress, and leave the viscera intact. The author favors arriving at this by less intensive treatment than advised generally, but continuing without interruption over a long period of time, minimum five years. The old regime laid great stress on the time factor or treatment over a period of many years. In the arsphenamine era of the last decade treatment insufficiently followed resulted in early allergic response, tertiary lesions appearing sooner than under the old regime. The systemic defense mechanism gradually develops a resistance in the patient to the infection, and it may not be so well to interfere too early with this natural defensive measure. He advocates starting treatment with the slower acting spirricides using them for a longer period, two to four months of mercury or bismuth, before using the arsphenamines and disregarding the slower clinical and serological response of the patient. With small dosage over a long period of time there is less danger of saturation and overdosage, elimination problems are reduced greatly, sensitivity to drugs detected with milder reactions, and rest periods are eliminated. Combined treatment is not given under the author's plan, that is the simultaneous administration of bismuth or mercury and the arsphenamines, by this he states that rest periods are essential, the danger of interfering with the natural defenses, and the eliminative organs are taxed excessively. He never uses arsphenamine on children, believing that sulphar-

sphenamine is better, and administers it intramuscularly. His dosage is considerably less than that generally advised. The patients take very small dosages of mercury and potassium iodide three days before the arsenical, and the dosage of neo-arsphenamine never exceeds .3 gm. given no oftener than once weekly. In heredosyphilis the dosage ranges from 0.01 gm. at birth to 0.15 at puberty. Bismuth and mercury are not given intravenously.

Bismuth is a very good drug, well tolerated by children, the dose ranging from 1-8 gr. at birth to 1 gr. at puberty; this however has not entirely replaced mercury as mercury is given by mouth to eliminate the rest period, and a milder acting drug may be wished. Mercury is given by injection—succinimide 1-24 gr. initially or the insoluble salicylates 1-16 gr. Mercury is given orally as soon as practicable, if the injection method cannot be used, if the baby is unable to attend regularly. The following prescription, hydrargyri bichloride 1-8 to 1-250 gr. potassium iodide dram 1 to 11, (dose 2 to 4 grs.) aq. qs. oz. 1. Mercury may be used by inunction ung hydrargyri 50% U. S. P. dr. 1 once a day.

Iodides empirically seem justified, and has beneficial effect on granulomatous tissue, it may be used with mercury as above, and when arsenicals or bismuth is being used he gives moderate doses of iodides three times a day for three weeks.

Routine plan used by him is as follows. First two weeks hg. succinimide (sol) 1-24 gr. three injections per week. Next six weeks, bismuth 1.8 gr. two injections per week. Two years thereafter using a single drug at a time and changing the drug every six weeks. Sulpharphenamine 0.01 gm. at birth to 0.1 gm. at two years; intramuscular injection, once a week for six weeks. Hg. and Kl. or Kl. internally. Mercury salicylate 1-16 gr. to 1-8 gr. Intramuscular injection once a week for six weeks. May substitute Hg. and Kl. Mist. for injection or mercury rub if impracticable. Third, fourth and fifth years each year give about one-half the treatment of the first year. Each year arsenobenzols, two courses of six weekly injections. Mercury and Kl. mist. at intervals.

**Transurethral Prostatic Resection versus Operative Prostatectomy.** Earl Floyd, M.D., and J. L. Pittman, M.D., Atlanta. *Journal of the Medical Association of Georgia.* June, 1932. Page 226.

After discussing the etiology, frequency and pathology of prostatic hypertrophy the development of prostatic surgery and resection, the authors compare the dangers involved in the two procedures as follows. There are three danger periods. 1. During the period of decompression, when the bladder is emptying, the kidneys become unbalanced, and the body tissues adjust themselves. At times an indwelling catheter will not suffice and a suprapubic tube must be introduced. This care must be taken whether the gland is resected or removed. 2. Dangers due to anaesthesia, surgical trauma and shock. The anaesthesia is the same, gas, parasacral or spinal. Surgical trauma and shock are not so likely in resection. 3 During convalescence, dangers due to hemorrhage, uremia and infection. Hemorrhage must be considered when the tissue sloughs in resection about the tenth day. It can be easily handled if the patient can be seen early and the

bleeding point located. Hemorrhage following operation can be controlled by the Hagner bag. Infection always has to be considered, especially infection of the kidneys.

The value and limitations of resection they sum up as follows; resection is indicated in fibrous bands, median bars, and solitary commissural hypertrophies. Here the entire median lobe can be resected out. In carcinoma in which the condition is too far advanced to bring about a cure resection will temporarily relieve the obstruction. In moderately enlarged and early prostatic hypertrophies resection is of value, because the back pressure changes in the kidneys and bladder are not far advanced. They do not feel that resection can take the place of prostatectomy in markedly enlarged prostates.

One cannot state too emphatically that resection is not a simple procedure, it requires a thorough knowledge of anatomy of the posterior urethra, and skill and experience in manipulation of the resectoscopic instrument.

**Some of the Complications of Prostatism and Prostatectomy.** Nathaniel B. Rathburn, Brooklyn, N. Y., *Pennsylvania Medical Journal*, May, 1932. Page 541.

The author presents a few of the most important complications of these conditions: 1. Cardiovascular complications; he states that in his belief prostatic enlargement is but one expression of the cardio-vascular changes that occur at this age incidence and cites that in the present period the theories propounded are (1) inflammation, (2) excessive ventry; (3) disturbance in hormone balance; (4) vascular. He states that he believes the vascular theory is the most plausible. He has conducted a series of autopsies in patients who have died with and without operation, and those who have died without any symptoms referable to the bladder or prostate. In those of the first group (with and without operation) he invariably found cardiovascular lesions which were out of proportion to the age incidence. The second (those without bladder or prostatic symptoms) some seventy in number who had died from frank cardiovascular lesions were more interesting. These ages varied from childhood up, and in each instance the prostate was sectioned and changes noted which were similar to those in the first group, these changes were noted near the periphery of the gland, and consisted of a dilatation of the follicles with retained secretion. This may be an edema of the ducts due to circulatory stasis. He states that a proper appreciation of these facts have an important bearing on the prognosis, operability and details of pre and post-operative care of the prostatic. Deaths from cardiovascular causes has in his series far exceeded all other causes, this includes emboli, cerebral apoplexy, circulatory failure, and hypostatic pneumonia. He admits that pre-operative most urologists check up on the renal function, but states that it is just as important to check up on the cardiovascular system, and the best way to do this is in co-operation with a good internist. He mentions that an electrocardiograph should be done on all operative prostates, as in this way Bundle branch block can be detected for one thing which will have an important post-operative significance, as the contra-indication to the administration of digitalis.

Seminal vesiculitis. All prostatectomies are



done through an infected field, and he states it is desirable for the prostatic to become infected and given time to develop a resistance to the infection. Patients who have had an infection for a long time are better operative risks than one with a clear bladder residual urine. The operation always involves a certain amount of trauma to the ejaculatory ducts, and this coupled with an infection is ideal for extension of the infection into the seminal vesicles. Epididymitis often complicates this condition, and vasectomy as a routine procedure should be done to guard against this complication.

**Hemorrhage.** The author states that he does routinely the two stage operation, and uses the gauze pack for hemostasis, he discusses the Hagner and Pilcher bags, also the suture of prostatic capsule etc., but prefers the pack, he states that he is able to remove the pack within the first forty-eight hours.

**Persistent suprapubic fistula,** some 90% of these he believes to be due to some remaining obstruction at the bladder neck. He describes numerous methods of dealing with these, and says that a careful inspection of the bladder neck should be made.

**Toxic psychosis,** he states that this has occurred in the higher intellectual patients, in those who were private room patients. These patients may carry on for days or weeks in more or less a state of violent insanity. The author states that he has never seen a case of permanent mental impairment. Lumbar puncture has not added any information in these cases. Sepsis is a factor, and a possibility of focus in seminal psychoses have varying degrees of uremia. Another possible factor is the disturbance of the hormone balance. The therapy of toxic psychosis can be summed up in dilution and elimination of toxins and drug control of violent delirium. Enough fluids to keep the tongue moist. For drugs he prefers paraldehyde by the bowel, and hyoscine hypodermically. For support he prefers intravenous glucose.

**Surgical Treatment of Median Bar.** James C. Burt and Clifford M. Lane, M.D., Pittsburgh, Pennsylvania Medical Journal, May, 1932. Page 547.

The authors state that given a patient with symptoms of prostatism it is impossible to distinguish the type of obstruction subjectively. Rectally you may feel a small, firm, irregular prostate. Visual inspection of the bladder neck is important in differentiation. A characteristic appearance of bar obstruction is the cave like cistern seen just as the cysto-urethroscope passes over the bar obstruction into the posterior urethra and before the veru is encountered. Given a patient for this operative procedure, the preparation is just the same as for a prostatectomy. Just as much care is necessary. Pthalein estimation, blood chemistry study, charting intake and output of urine, liberal amounts of water, bladder drainage with indwelling catheter. This period is generally shorter than for prostatectomy. The authors use the electrotome through the McCarthy panendoscope. After introducing the panendoscope the electrotome is put in place and the first incision is made at six o'clock, care being used to cut deep enough. Auxiliary incisions are made at five and seven o'clock for the purpose of enlarging the groove. After finished

one should be able to see from the veru montanum through the groove to the base of the bladder. If the patient had a large residual and impairment of renal function a retention catheter is placed in for three or four days. Residual urine may not disappear for two months. The authors believe that much more important than the selection of the type of instrument is the selection of the type of patient. They state that despite the favorable results reported elsewhere they have had satisfactory results only when there was no hypertrophy present.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
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**Spinal Zone Anesthesia—Placed at Will and Dosage Individually Graded.** Professor Martin Kirschner, Tuebingen, Germany, Surgery Gynecology and Obstetrics, Volume LV, No. 3, September, 1932, Page 317.

This author has devised a rather elaborate means of securing anesthesia by what he terms "spinal zone anesthesia with individually determined dose." He has here written a very comprehensive article reviewing the objections to ordinary spinal anesthesia, giving the apparatus necessary in his method as well as the technic, outlining the principles and precautions together with a brief summary of the clinical results.

He points out that while spinal anesthesia is inherently a splendid method it has been somewhat regarded as a "hit or miss procedure." The objection being that one cannot control either the level to be reached within the dural sac or hold it at the level attained. He also states that there are relatively great differences to the sensitiveness of individuals to the calculated dose, and he feels that a predetermined average dose as used in ordinary spinal anesthesia may be unnecessarily large in one case, producing toxic symptoms, or may prove too small in another case, resulting in unsatisfactory anesthesia.

He objects to the method developed by Pitkin on the basis that it has not overcome these two great disadvantages, ie., (1) spread of the anesthetic solution in the spinal fluid with inaccurate determination of level of anesthesia, and (2) inaccurate individual dosage.

This author has devised a method which he feels makes it possible to have the anesthetic solution placed at will in a definite segment of the spinal cord and maintained there, and in addition allows the dosage to be regulated to the individual patient.

The principle of this method is self-evident from the following quotation:

"1. With the patient placed so that the head is low and the buttocks are elevated, a spinal puncture is done and a certain amount of cerebrospinal fluid is removed and replaced by an equal volume of air. The air bubble collects in the highest portion of the dural sac within the sacral bone. An anesthetic solution, which is lighter than the cerebrospinal fluid and being oil-like is not miscible with it, is injected into the dural sac. The fluid will naturally collect and take its place between the cerebrospinal fluid

and the air bubble. Because it is lighter than the cerebrospinal fluid it cannot spread cephalad and it cannot pass toward the sacrum because of the lighter air.

In view of the fact, however, that the separation into three layers—the cerebrospinal fluid, the anesthetic charge, and the air—will take place rather slowly and incompletely if dependent alone on the slight differences in the specific gravity, it is desirable to carry out still another procedure. This consists in injecting the anesthetic solution through a special cannula the end of which is beveled off at forty-five degrees and which is armed with a lateral opening just above the point (Fig. 1). The solution can be projected a considerable distance cephalad or caudad by turning the lateral opening in one or the other direction. Only the combination of this mechanical force plus gravity will insure a dependable separating out of the cerebrospinal fluid, the anesthetic charge, and the air.

Only those spinal roots which pass through the layer of the anesthetic solution will become anesthetized. The roots corresponding to the layer of air of cerebrospinal fluid will not be thus affected. In this manner we accomplish (1) zone anesthesia (Fig. 10).

2. If to begin with insufficient air is injected or if some of it is aspirated, the anesthetic solution will advance in the direction of caudal roots and the zone of anesthesia will involve the lower extremities (Fig. 11). If considerable air is injected at the first or second attempt, the anesthetic charge will be driven cephalad advancing the zone of anesthesia in the same direction (Figs. 9 and 10) while the legs whose corresponding roots are protected by the area of air will retain their sensibility. In this manner we accomplish (2) a spinal zone anesthesia limited to the upper trunk.

3. Rather than introduce the calculated dose at once, one may begin with a smaller dose, testing the skin sensibility after injection, and adding more anesthetic if necessary, thus securing the desired depth of anesthesia in stages and giving each patient the minimum amount of the drug, neither more or less! We thus secure (3) controllable spinal zone anesthesia with individually determined dose!"

There follows a minute description of the apparatus which is moderately complicated. He then considers the technic of introducing anesthesia. One of the principal precautions of which is the necessity for keeping the body inclined with the head down to at least twenty-five degrees throughout anesthesia, operation and post-operative period. By this method the author has been able to produce real zone anesthesia with, for example, complete anesthesia in the lower abdomen but no anesthesia at all in the chest and legs, made possible by the location of the anesthetic fluid at a definite level, lying between the heavier spinal fluid underneath and the lighter air above it.

He reports 700 cases among which there were 500 laparotomies of which 200 were performed for gastric resection and 70 were operations upon the bile tracts. He does not give any mortality statistics, which of course would be interesting. He does say there is smaller fall in blood pressure than commonly experienced in spinal anesthesia, and that complicating headaches were exceptional and mild.

In upper abdominal operations, particularly on the stomach, he also uses regional anesthesia of the vagus and sympathetic system.

The author then enumerates a list of twelve technical errors possible in the new method of anesthesia. In summary he points out that the decided advantages of this method are, (1) anesthesia of only a selected segment of dural sac with limitation to this area, and, (2) individual dosage, making possible extraordinary reduction in the size of the dose with the diminution of the known and unknown accidents of former methods. He defends the elaborateness of the procedure on the basis that heretofore in spinal anesthesia the anesthetist has been somewhat of a bungling helper whose task consisted in the injection of a definite dose of anesthetic in the spinal canal, whereas in this method individual skill is required in localizing and grading the anesthetic charge as in inhalation narcosis.

**Comment:** Much work has been done in the field of spinal anesthesia and this is certainly a good work in the right direction. However, it is true that this author, as well as other enthusiasts of a particular method, wishes to apply this means of anesthesia to every patient, whereas individualization is just as necessary in anesthesia as in other therapeutic measures in medicine. The history of spinal anesthesia is a long list of rabid enthusiasts when each new improvement is attained. The method described has several very definite objections for general use. The elaborateness while definitely limiting the field of such procedure to the duties of a well trained anesthetist, where it should ordinarily be anyhow, is not so much of an objection as is the fact that upon the posture of the patient depends his life for a given length of time, which is longer in this type of anesthesia than with ordinary novocain crystals, because it does not "fix" as rapidly in the tissues. Even in well regulated hospitals using Pitkin's spinocaine a few deaths occurred from allowing the patient to sit up shortly after administration of anesthesia.

Wendell M. Long, M.D.

**A Study of the Deaths Following 6022 Gynecologic Operations.** J. P. Greenhill, B.S., M.D., F.A.C.S., Chicago, Ill., *American Journal of Obstetrics and Gynecology*, Vol. XXIV, No. 2, August, 1932, Page 183.

This author has presented a brief analysis of the deaths which occurred on the Gynecological Service of the Cook County Hospital from January 1, 1926, to January 1, 1931.

The author's summary follows, which is self-explanatory and gives valuable information because of the large group studied.

"In a series of 6,022 operations performed on the gynecologic service of the Cook County Hospital there were 213 deaths, an incidence of 3.5 per cent. All the patients were charity patients and about 50 per cent of them were negroes.

The mortality rates for the largest groups of operations were as follows: For the 747 abdominal supracervical hysterectomies, it was 0.8 per cent; for the 661 abdominal supracervical hysterectomies with bilateral salpingo-oophorectomies, it was 8.9 per cent; for the 350 abdominal panhysterectomies with removal of both adnexa, it was 4.3 per cent; for the 449 defunda-



tions with salpingectomy, it was 4 per cent; for the 201 abdominal panhysterectomies, it was 5.5 per cent; and for the 158 vaginal hysterectomies, it was 1.9 per cent.

The most frequent operative diagnoses in the fatal cases were fibroid uterus 69, salpingitis and pelvic inflammation 65, malignancy 31, ovarian cyst 13, and intestinal obstruction 11.

The commonest causes of death in the fibroid group were peritonitis 50.8 per cent; embolism 13 per cent, hemorrhage and shock 11.6 per cent, myocardial failure 10.1 per cent, and pneumonia 7.2 per cent. The chief causes of death for the inflammatory group were peritonitis 61.5 per cent, hemorrhage and shock 21.5 per cent, pneumonia 9.2 per cent, and embolism 3.1 per cent.

The most frequent causes of death for the entire series of 213 cases were as follows; peritonitis and ileus 48.8 per cent, hemorrhage and shock 16.4 per cent, embolism 8.5 per cent, pneumonia 8.5 per cent, malignancy and cachexia 7.5 per cent, and myocardial failure 5.2 per cent.

There were 14 serious complications during operation and 29 grave complications after operation."

**Comment:** A great deal of gynecological surgery is elective in type and the gynecologist has a grave responsibility, not only in determining the functional, mechanical and vital advantages or operation, but he must also carefully weigh these against the incidence of complications and mortality usual in his hands. There is certainly no better means for the conscientious surgeon to practice introspection than in the careful study of mortality statistics and the complications causing the deaths.

Wendell M. Long, M.D.

**Effect of Knee-Chest Position and Postural Exercises on Postpartum Retroversion.** Goodrich C. Schauffer, M.D., Portland, Oregon, *The Journal of the American Medical Association*, Volume 99, No. 9, August 27, 1932, Page 726.

This author's clinical observations of the results of the usual measures empirically prescribed to curb postpartum retroversion suggested to him that the empiricism might be without basis in fact.

He, therefore, studied a group of one hundred sixty-nine cases, half of whom he put on knee-chest position and postural exercises after delivery, whereas the other half were not given such measures. He found that on careful examination, by either himself or his associate, at the end of six weeks there was a substantially high incidence of postpartum retroversions in the group subjected to the so-called corrective measures.

The material used consisted of consecutive deliveries at the Salvation Army White Shield Home. The patients were nearly all strong young women, 90% primiparous, presenting a group relatively free from retroversions from previous pregnancies, prolapse and such complications.

The author has compiled a graphic chart of the percentage in each group.

He feels that it is fair to conclude at least that the use of such exercises does not justify the confidence which has formerly been placed in

them. He thinks that it would even be wise to seek for factors in the use of such exercises that might actually retard the tendency toward involution and return to the normal anterior position.

Wendell M. Long, M.D.

**Treatment of Carcinoma of the Cervix.** Thomas E. Jones, M.D., Cleveland, Ohio, *The Journal of the American Medical Association*, Volume 99, No. 11, September 19, 1932, Page 880.

This is a report on a series of four hundred twenty cases of cancer of the cervix in patients examined, treated and observed during the period from 1920 to 1931. In this group there were three hundred two cases of primary carcinoma; in eighty there were recurrences following operation or irradiation elsewhere, and in eighteen the lesions were too far advanced for any possible treatment. The author reports twenty-five per cent of the one hundred forty-eight patients treated over five years ago as alive and well.

There is a resume of the technic of radium therapy and complications. All his cases were treated by radium.

This author, like so many others, feels that the largest remaining problem is that of getting the patient to seek medical advice when the disease is still in an early stage.

The discussion by Dr. W. P. Healy of New York is excellent from the standpoint of prophylaxis and early diagnosis, the two most important phases of the treatment of cancer of the cervix today. Dr. Healy makes the statement: "In cancer of the cervix early diagnosis is impossible except by accident. The majority of the cases of cancer of the cervix begin beneath the mucous membrane, are of the anatomically infiltrating type, and fail to give symptoms while they can be regarded as early cases. The only symptom the woman has which may lead her to suspect cancer is the appearance of blood as the result of contact, following intercourse or the use of a douche tube, or occurring between periods from ulceration. She cannot have bleeding without having destruction of tissue, and destruction of tissue must mean open lymphatics, through which cancer cells are readily disseminated beyond the primary focus. This is why early cases are not seen. Ninety-four per cent, approximately, of these cancers of the cervix develop in women who have borne children. I believe more attention should be given to prophylaxis in cancer of the cervix, probably much more than to treatment."

Dr. Healy also quotes from the report made by Dr. Graves from the Brooklyn Free Hospital for Women in Boston, in which they studied the low incidence of cancer of the cervix occurring in cases after cervical operations and cauterization.

Wendell M. Long, M.D.

**Pelvic Diagnosis By Roentgen Visualization.** Irving F. Stein, M.D., F.A.C.S., Chicago, Illinois, *Surgery, Gynecology and Obstetrics*, Volume LV, Number 2, August, 1932, Page 207.

This author reviews the advantages of roentgen visualization as connected with pelvic diagnosis. He describes the technic used at the Michael Reese Hospital together with the type of special

table, special speculum and self-retaining canula. He briefly outlines the contra-indications as well as some of the precautions to be taken in the procedure.

The group with which Dr. Stein is associated has been very careful, but at the same time progressively active in helping to develop this newer type of diagnosis, and unquestionably, there is considerable worth to their method of both uterosalpingography as well as the combined uterosalpingography and pneumoperitoneum.

Dr. Stein closes the article with the well advised admonition, "A judicious selection of patients, after consideration of the menstrual history, and a careful general and pelvic examination, and a deliberate and painstaking technic roentgenograms."

are essential to obtain satisfactory diagnostic

**Comment:** This, like many other types of diagnostic methods, should be employed only after the most careful history and examination, and as Dr. Stein remarks, should be used only after a very judicious selection of patients. With these precautions such investigative means can be of invaluable aid.

Wendell M. Long, M.D.

**Avertin in Gynecology—A Report of Three Hundred Consecutive Cases.** Reuben Peterson, M.D., F.A.C.S., Ann Arbor, Michigan, and James M. Pierce, M.D., F.A.C.S., Cincinnati, Ohio. *Surgery, Gynecology and Obstetrics*. Volume LV, Number 2, August, 1932.

These authors report a series of three hundred consecutive gynecological operative cases in which avertin was used as the only anesthetic in one hundred eighty-six patients, and as the principal anesthetic plus nitrous oxide in one hundred ten patients, and as the principal anesthetic plus ether in only four patients. Of these three hundred cases one hundred seventy-two were laparotomies and one hundred twenty-eight vaginal operations. Their technic is carefully recorded and a comprehensive table of types of operations and results given.

These very reliable authors feel that "avertin more nearly approaches the ideal anesthetic than any other drug which has been employed in the clinic because it—

1. Induces a deep sleep very smoothly.
2. Causes very little postoperative nausea and vomiting.
3. Produces a complete amnesia.
4. Fewer gas pains follow its administration.
5. It irritates none of the body organs, either in the process of its administration or its elimination."

They report that in this series they have no post-operative complications with the anesthetic, and no deaths.

**Comment:** At this time when many different kinds of anesthetics are being employed we are all deeply interested in using the most ideal means of producing anesthesia, but it has always seemed to me that the individual patient, the procedure to be done, and related conditions were of importance in determining the type of anesthesia. In other words, there are advantages to every anesthetic as well as disadvantages, and

they all have their particular field of application, so that it would be difficult to recommend one particular anesthetic for general use. Individualization of indications is far more important.

Wendell M. Long, M.D.

**A Study of Cancer of the Stomach.** C. P. Howard, M.D., F.R.C.P. (C) and C. W. Fullerton, M.D., Montreal. *The Canadian Medical Association Journal*, September, 1932.

The first part of this article is devoted to an exhaustive and instructive review of the cancer question which seems to show that the death rate from cancer is mounting. Reference is made to the post-mortem statistics from England which show an incidence of 1 per cent of cancer of the stomach among 8,462 autopsies; to statistics from Vienna which show 1.47 per cent of cancer of the stomach among 61,287 autopsies—"a figure probably nearer the truth than any one hospital series."

An analysis is made of 255 cases of cancer of the stomach admitted to Montreal General Hospital during the last ten years. The average age of onset was about 56 years. Eighty per cent occurred between 40 and 70, but there were 17 cases under 40. Three patients with sarcoma were from 17 to 28 years.

In 18.7 per cent there was a history of malignancy in the family. The authors believe that there should be a careful investigation in connection with the question of heredity.

Past gastric disturbances were not significant, and the authors "found little to substantiate the view that previous gastric disturbances predispose to carcinoma." While 22 per cent gave a history of long standing dyspepsia, it is the conclusion that "the role of gastric ulcer as an etiological factor seems to be a very minor one."

In this series syphilis and alcoholism were rarely encountered, "and certainly played no etiological role." In one patient the onset followed a severe blow in the epigastrium.

The average length of duration of symptoms was 9.2 months, but in 50 per cent there was a history under six months. Still more striking, 25.5 per cent had a history covering three months or less. Several patients had noticed symptoms only three weeks or less.

In 23.2 per cent there was a history of acute or sudden onset. This is explained by the assumption that carcinoma may involve the stomach wall for a time without definite symptoms, these appearing only when there is encroachment upon the lumen, especially in the region of the pylorus, when there are pain and evidences of obstruction.

The symptoms of onset varied, but pain predominated, occurring in 46.5 per cent of patients. Weakness, anorexia, vomiting and dyspepsia were the next most frequent initial symptoms, one or more occurring in 13.5 per cent. Haematemesis was the initial symptom in four cases. In three cases the patients were first disturbed when there was jaundice, swelling of abdomen, dysphagia and palpable abdominal tremor. Only three patients complained of loss of weight as first symptom, suggesting that "loss of weight is secondary to and commensurate with, the loss of appetite."

The symptoms on admission were varied, but in



88.2 per cent the chief symptom on admission was pain. In some it was slight soreness, in others acute and stabbing, but in the majority (62 per cent) it was dull and gnawing. As a rule, the pain was located in epigastrium, but in a few it was in gall bladder region, about the umbilicus or over the entire abdomen. In eleven patients with carcinoma of cardiac portion of stomach there was pain under sternum or in lower chest; in two there was pain in lower abdomen, and in two the only pain was in left costo-lumbar region. In 60 per cent there was a definite relation of pain to taking of food, the pain occurring at once or at any time up to three or four hours after eating. Nocturnal pain was rare, it occurring only three times in the series.

On admission there was complaint of dyspepsia—gaseous eructations, fullness in connection with pain—in 94 per cent. In 89 per cent there was partial or complete anorexia, and vomiting in 67 per cent. There was blood in the vomitus in 16.4 per cent of the series. There was weight loss in 96.5 per cent, and practically all complained of weakness.

Constipation was noted in about half the patients, diarrhea in 8, and in 9 constipation alternating with diarrhea, this latter suggesting invasion of the colon.

Fever was noted in 38.7 per cent. In this connection, the authors quote Friedenwald, and Osler and McCrae "who noted fever in 43 per cent, and in 49 per cent, of their cases, respectively."

On admission, there was cachexia in 63.4 per cent of the patients, this terminal condition being definitely indicative of disastrous delay.

There was abdominal tenderness in 54.7 per cent, and in 41.4 per cent there was abdominal resistance on palpation. In 33 per cent the liver was palpable; in 12.5 per cent, there was jaundice, and in 10 per cent ascites.

There were metastases in 33.7 per cent, the liver being involved 63 times, the peritoneum 14 times, Virchow's "sentinel gland" 8 times, the abdominal wall 5 times, neck glands 2 times, spinal cord (presumably spinal column—L.L.) 1 time. In one case it appeared that the carcinoma of the stomach was secondary to carcinoma of the breast.

The authors believe that the red blood cell count is of but little aid in the diagnosis early in the disease. The anemia seems to bear a direct relation to the amount of blood lost.

The white blood cell count was interesting in that 31.2 per cent showed a leucocytosis of 9,000 to 18,200. The differential W.B.C. was practically normal.

Blood was found in the stools (benzidine test for occult blood) in 74.5 per cent of the patients.

In general, the Ewald test showed either absence or great diminution of HCL. Occult blood aspirated from stomach was present in 60 per cent; lactic acid in 19 per cent; Boas-Oppler bacilli in 7.9 per cent.

In 201 patients there were radiographic examinations of the stomach after a barium meal, and in 87.5 per cent, there was accurate diagnosis of carcinoma.

There was six hour retention in 44.7 per cent, and in 25.3 per cent the retention was extreme.

The pylorus was by far the most common site

of the tumor—102 cases. The greater curvature, the lesser curvature, the cardiac end, were involved in 18, 20 and 20 cases, respectively.

The treatment was altogether unsatisfactory. Exactly one-half—127—were submitted to operative treatment, and in 56 of these nothing could be done. Palliative procedures were carried out in most of the others. In only 8.8 per cent was it possible to perform gastrectomy with a fair chance of success.

A pathological diagnosis was made in 109. In 59 there was adenocarcinoma; carcinoma simplex in 34, colloid carcinoma in 6. In 9 cases the entire stomach was involved, the picture being that of linitis plastica.

"Ulceration of the tumor was noted in 31 cases, but in only 2 instances was the carcinoma thought to be secondary to a chronic indurated ulcer."

The article closes with the definite advice that "every patient of middle age who has gastric symptoms should be suspected, the more so if the history is of short duration; secondary, even if all methods of examination are negative, an exploratory laparotomy is indicated if the history and symptoms are suggestive."

—LeRoy Long.

**Simple Goitre—Its Racial Incidence and Its Relation to Nutrition.** A. Clifford Abbott, B.A., C.M., F.R.C.S. (Edin.) Winnipeg. *The Canadian Medical Association Journal*, September, 1932.

An analysis of the incidence of goiter in 30,715 school children in Winnipeg having the same municipal water supply shows that the percentage is very high in Central European and Jewish races—Ruthemian, Jewish, Russian, German, Hungarian, Latharian, Austrian—from 23.1% (Austrians) to 38.5% (Ruthemians). The incidence is relatively low in English, Scotch, Irish, Welch and Icelandic—from 8% (Icelandic to 13.4% (English).

Considering sanitary conditions, hours of sleep, opportunities for play and diet, there does not appear to be any marked difference except in the case of diet. The author shows that in the first group (Central European) the diet is not well balanced. He points out particularly that with all the races represented in this group boiled cabbage is a staple article of diet, with the exception of the Jewish in which the average diet carries an overabundance of fat.

Reference is made to the experimental work of Chesney, Clowson and Webster, (*John Hopkins Hospital Bulletin*, 1928), which showed that a large percentage of experimental animals (rabbits) fed largely on cabbage developed large goiters with low basal metabolic rates.

**Comment:** Through the fine courtesy of Dr. H. J. G. Geggie, Wakefield, Quebec, I had the opportunity of seeing some two dozen cases of goiter in a French farming community in the Gatineau district of Quebec during a drive of a couple of hours one afternoon. Practically all of them were of the large non-toxic colloid type. Dr. Geggie tells me that in this district cabbage is not eaten to an extent beyond the average.

—LeRoy Long.

## BOOK REVIEWS

**The Sputum, Its Examination and Clinical Significance.** By Randall Clifford, M.D., Associate in Medicine, Peter Bent Brigham Hospital; Assistant in Medicine, Harvard Medical School; Formerly Associate Physician and Director of Pulmonary Clinic, Massachusetts General Hospital. Seven Colored Plate Illustrations, Twenty-one Photographs. Cloth, Price \$4.00. The MacMillan Company, New York.

**Mental Deficiency Due To Birth Injuries.** By Edgar A. Doll, Ph.D., Director of Research, The Training School at Vineland; Winthrop M. Phelps, M.D., Professor of Orthopedic Surgery, Yale University School of Medicine; Consultant on Birth Injuries, The Training School at Vineland; Ruth Taylor Melcher, M.A., Research Assistant, The Training School at Vineland, N. J. Cloth, 289 pages. Price \$4.50. The MacMillan Company, New York.

Birth injuries are probably the most tragic occurrences happening to mankind. The expectant mother and the family cannot realize the tragic end results of such injuries. Neither does anyone realize the care the child must have, not only throughout its childhood but for the remainder of its life.

This book has for its object, the retaining, as far as possible, the correction of any abnormality which may be corrected. The handling of these cases is necessarily a continuous and long performance. Many of the children make remarkable progress especially where injuries are motor disturbances rather than mental; often the children are very bright but are utterly helpless physically. There is no question but what the problem is one belonging to the orthopedist, occasionally to the surgeon, the neurologist and rarely to the family physician.

**Posture, Its Relation To Health.** By Frank D. Dickson, M.D., Orthopedic Surgeon, Saint Luke's Hospital and the Kansas City General Hospital, Kansas City Mo. 118 Illustrations, Leather, Price \$5.00. J. B. Lippincott Company, Philadelphia and London.

Many unnecessary deformities may be corrected and prevented by early treatment. Dickson lays special stress upon the correction of these conditions, many of which originate in childhood and youth.

**Functional Disorders of The Gastrointestinal Tract.** By William Gerry Morgan, M.D., F.A.C.P., Professor of Gastroenterology, Georgetown University Medical School; Consulting physician, Georgetown University Hospital, Garfield Memorial Hospital, and Gallinger Hospital, Washington, D. C. 32 Illustrations Leather, Price \$5.00. J. B. Lippincott Company.

Many of the woes of mankind come from overlooked and neglected disorders of the gastrointestinal tract. Dr. Morgan, in this book, considers Physiology, various examinations of the patient, a General Discussion, the Motor Neuroses, the Secretary Neuroses, Sensory Neuroses,

Motor-Secretory Neuroses and miscellaneous Symptoms and Conditions.

**Orthopedics In Childhood.** By William L. Sneed, M.D., Attending Surgeon, Hospital For The Relief of The Ruptured and Crippled; Fifth Avenue Hospital; Consulting Surgeon, French Hospital; Nassau County and North Shore Community Hospitals; Instructor, Applied Anatomy Cornell Medical College. 145 Illustrations, Leather, Price \$5.00. J. B. Lippincott Company, Philadelphia and London.

There are many orthopedic conditions, originating in childhood, which if discovered early and treated intelligently, may be entirely cured, or greatly benefitted. The principal thing is to hold the progress at least in the conditions at the point noted when first discovered. Many deformities, postural and actual may be entirely eliminated, or so greatly benefitted that they are hardly discoverable, if they have logical and early orthopedic treatment. The child with a moderate condition, which is surely to grow worse as age advances should have the advantage of skilled orthopedic treatment. While much of this may be done by the intelligent family physician, certain orthopedic consultations should be had often enough to check up on proper treatment and care for the condition in hand.

This volume contains fifteen chapters with proper subdivisions and should be in the hands of every practitioner.

**Essentials of Pathology.** By C. Russell Salisbury, M.D., C.M., Professor of Anatomy, University of Oklahoma. Cloth, Illustrated, 270 pages. Price \$2.00. The MacMillan Company, 60 Fifth Ave., New York, 1932.

The author, in his preface to this volume, states that it is the fruits of nearly four years of work, and consists of enlarging the notes and scope of its contents during that time to include the new concepts of pathology; that controversial matters have been clarified, and that it is neither encyclopedic or a synopsis. He has presented those aspects of pathology that have a definite bearing on disease, as seen clinically. Such a work is of value in that it connects up the pathological findings of the given case with the clinical aspects, both of which must be considered if the practitioner is to successfully handle his problems. It is subdivided into nineteen chapters and index, very important of which are those devoted to the specific infectious diseases and the digestive system. Oklahoma physicians should feel especial interest in the work, in that it is a product of one of our collaborators, is well written, lacks dryness, and is therefore entertaining.

**Functional Disturbances Of The Heart.** By Harlow Brooks, Attending Physician, Fourth Medical Service, Bellevue Hospital. Consulting Physician, City Hospital, Montefiore Hospital, Beth Israel Hospital, St. Vincent's Hospital, Fifth Avenue Hospital, Hospital For Joint Disease, Polyclinic Hospital, French Hospital, and Consulting Physician to St. John's Hospital and St. Joseph's Hospital, Yonkers, to The Greenwich Hospital, Greenwich, Conn., to The Hackensack Hospital, Hackensack, N. J., The Southside Hospital, Long Island, etc. Emeritus Professor of Clinical Medicine, New York University, and



Bellevue Hospital Medical College. Leather, Price \$5.00.

Functional Disturbances of the Heart seem just as serious to the patient as those of organic origin, so it is up to the physician in charge to determine as early as possible which type of heart condition he is dealing with. It is also up to him, if possible, to determine the cause of the functional disturbance and remove it. Naturally the physician should be very careful in making dogmatic statements as to the condition found, based upon his opinion, for his patients often become neurotic, engendering the fear of sudden death and making their lives generally miserable.

Harlow Brooks is recognized as one of our national authorities on heart conditions. This volume is divided into eleven chapters, with many subdivisions. The book is beautifully bound and so written that it is one of rarity—a medical book easily read.

**Behind The Door Of Delusion.** By "Inmate of Ward 8," Cloth, 325 pages, Price \$2.00, The Macmillan Company, 1932.

This book for obvious reasons is written anonymously, by a bright observer, who is not a psychotic, but admits that he voluntarily agreed to incarceration in order to free himself from years of alcoholism. In a strict sense such a man has no business in a hospital for the insane, but no one can question that he adopted a manly course in order to save himself from becoming a complete wreck. The twenty-one chapters fairly glow with wit and pathos, but they state conditions of patients, personnel and medical attendants of the "State Hospital" as it exists throughout the United States. The writer makes one suggestion more than worth while, and that is that before any person is finally admitted as an inmate he should be observed by skilled physicians rather than the hurriedly, usually unqualified board of physicians, usually picked up at random by a busy judge, and often without the slightest knowledge of, or interest in nervous and mental diseases. The writer facetiously dedicates the book to a better understanding of those on the inside by those who are not yet locked in. His years of editorial work on large newspapers gives him a commanding advantage in telling his interesting story.

#### CORRESPONDENT OUT OF HUMOR

The present indications are that, not only me, but plenty of small town and country doctors will go out of business in the very near future. The State legislature will meet next year and the plans are already set for a bill to take all medicines from doctors and only allow them a pad of prescription blanks with pharmaceutical union label on them; and maybe two morphine tablets and three or four tablets of aspirin.

In this little place we have only one drug store, which is operated by a man of eighty years of age, nearly blind and very contrary, and who won't keep anything but the cheap, common drugs. Some of the people won't take a prescription to him. The wholesale houses of Ft. Smith and Oklahoma City won't sell me any drugs and tell me to go to him. (He is a hold over from territorial days and was never in a school of

pharmacy a day, and does not even have a common school education).

If times were good I would be working under difficulties on this account and now nine-tenths of the people are without money. I think I will let the business go on till January and if no better all I can do is to get to other work. I have a master's degree in the teachers line and can make more money teaching a one room country school than I am making now.

C. R. MORRISON, M.D.  
Red Oak, Oklahoma.

#### LETTER FROM DR. LE ROY LONG

Ottawa, Ont.

September 17, 1932.

Dr. Claude A. Thompson,  
Muskogee, Oklahoma.

Dear Dr. Thompson:

Last week I attended the 12th Congress of the French Speaking Physicians of North America at the Chateau Laurier, Ottawa, Ont., Canada, and I have thought that the readers of the Journal might be interested in an article about it.

The official name of the organization is, "Association des Medecins de Langue Francaise de l'Amerique du Nord." It is a unique group, organized thirty years ago (1902) in Quebec. Since then it has met in Congress (Congres) every two years with the exception of the period covered by the World war and the readjustment immediately following it.

I have not seen a copy of the governing regulations, but three purposes are apparent: 1. The perpetuation of the conquests and traditions of French medicine. 2. The preservation of the vital solidarity of the French speaking medical profession of North America. 3. The encouragement of the study of French medicine through the literature, through associations, and through clinical contact.

In the official work of this Congress every word was in French. But that does not mean that the French Canadian physicians do not speak English. On the contrary, and practically without exception, they speak English fluently. I suppose there is no place in the world—not even in Switzerland—where educated people have such freedom and elasticity in bilingual intercourse as among the French physicians of Canada. It is not uncommon to find an English speaking physician who does not speak French, notwithstanding he may be surrounded by French speaking people, but I have yet to find a French Canadian physician unable to express himself intelligently by the use of the English language.

This Congress in Ottawa is the first outside of the Province of Quebec—and it is barely outside, for just across the beautiful Ottawa river is the French city of Hull, in Quebec. The next Congress, in 1934, will be held in the city of Quebec.

The formal opening of the congress (Ouverture Solennelle) took place in the ball room (salle de bal) of the Chateau Laurier at 2:00 P. M., Tuesday, September 6, and this was immediately followed by the scientific programme.

The Congress was not divided into sections. All papers were read; all demonstrations made

at a general meeting of the Congress (Seance pleniére).

After the first day the work of the programme was begun at 10:00 A. M., daylight saving time. There were sessions in the afternoon and in the evening. Papers and demonstrations quickly succeeded each other, usually without discussion. The intense, rapid-fire work was a distinctive feature, and strikingly reminded me of the Inter-State Post-Graduate Medical Assembly.

There were four distinguished guests from Paris—M. le Docteur Antonin Clerc, a celebrated authority on diseases of the cardio-vascular system; M. le Docteur Gaudard D' Allaines, a surgeon of note; M. le Docteur Maurice Chevassu, an enthusiastic urologist, and M. le Docteur Robert Ducroquet, no less enthusiastic orthopedist. Each of these held clinics at the two principal hospitals (the General and the Civic) from 8:00 to 10:00 in the mornings.

The first paper on the scientific programme—Clinical Forms of Myocardial Infarction (Formes cliniques de l'infarctus myocardiue) was by Clerc. There was nothing strikingly new in what he said, but he is a very earnest man, who is able to present a subject in such a way that it seems complete. He is a pupil of Vaquez, and has high regard for his old master.

As will be seen from the programme I am sending with this, the papers covered a wide field. In all, about forty subjects were discussed before one group in two and a half days.

I am enclosing a list of those registered up to the morning of the second day. Many registered after that time. I am informed by M. le Docteur Eugene Gaulin that the total registration was about four hundred. I was told, also, that the organization has nearly four thousand members.

The Congress was terminated by a banquet at which M. le Docteur Valin, retiring president, presided. Several speeches were made, including a very happy one by Prof Clerc.

The principal officers for the next two years are: President M. le Dr. Albert Paquet, Quebec; Secrétaire du Congrès, (Corresponding Secretary), M. le Dr. J. Vaillancourt, Quebec; Secrétaire Archiviste (Recording Secretary), M. le Dr. Donatien Marion, Montreal; Trésorier, (Treasurer) M. le Dr. Paul Garnau, Quebec.

The proceedings of the Congress (Les Comptes Rendus du Congrès) will be published soon. I shall have the opportunity to study the contributions in surgery, and to prepare some abstracts of the more important ones.

Yours truly,

LeRoy Long.

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## CEREBELLAR EPIDERMOID (CHOLESTEATOMA)—A REPORT OF CASE

HUGH JETER, M.D., A.S.C.P.

Pathologist University Hospital—Assistant Professor of Clinical Pathology—University of Oklahoma School of Medicine  
OKLAHOMA CITY

Less than one hundred cases of cholesteatomata have been reported in literature. They are not only rare, but their nature and origin are unusual, and the clinical diagnosis is difficult.

We use the term epidermoid from the suggestion of Critchley and Ferguson, who have so completely reviewed the information and reports on such cases. It perhaps is more commonly called an in-

tracranial cholesteatoma. However, it is not to be confused with the so-called cholesteatoma of the middle ear or mastoid region, which is occasionally encountered, probably as the result of chronic inflammation. There is also a so-called skin cholesteatoma which is evidently the result of chronic inflammatory changes.

The tumor herein reported is probably congenital, is neoplastic only in the sense, that it is a misplaced embryonic structure serving no useful function. It grows very slowly; or perhaps more properly, becomes larger very slowly, because of the increase in degenerated material in its center. It does not infiltrate tissue, neither has it been known to give rise to metastases. The tumor is cystic in nature, the wall of the cyst being composed of a layer of squa-



FIGURE ONE—Sagittal section of the brain showing the cerebellar tumor

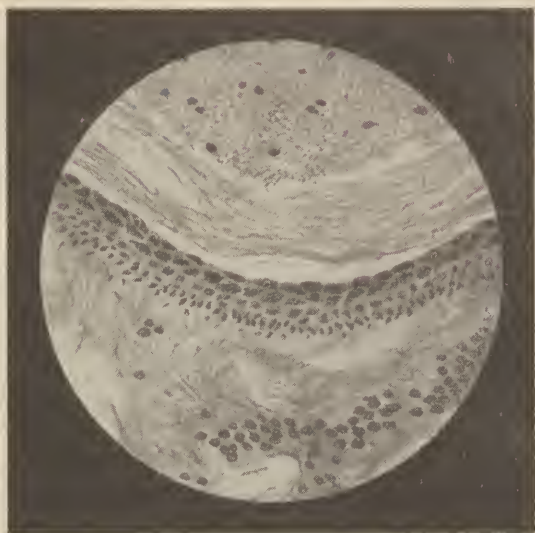


FIGURE FIVE—Semidiagrammatic high power microphotograph showing the epithelial nature of the tumor.

mous epithelium with the stratum corneum on the inside. The cavity of the cyst is filled with laminated layers of desquamated, squamous type cells packed so tightly, that the outer layers give a pearly gray appearance. It is this portion which contains the cholestrin which has been explained as being the result of the breaking down of keratin. In the case reported herein, the center was soft, brown and dry. The outer layer, or that which corresponds to the basement membrane or basal cell layer, is supported by mesoblastic tissue and closely associated with the meninges at least in some areas. The tumor is remarkable because of its lack of vascularity.

#### REPORT OF CASE

T. A. B., white male, merchant, the father of a physician; aged 58 years gave a history as follows:

**Early Symptoms.** About twenty-five years ago he could not balance himself on his right foot, but could stand on the left foot in a normal manner. In 1919, he began to stagger to the right, this symptom being exaggerated by fatigue. From the earliest recollection he found it difficult to stay on the side walk when walking, except by consciously resisting his tendency to go to the right. He had failing eyesight and procured glasses. He first noticed diplopia in 1924. For about ten years, he had had indefinite gastric symptoms, nervousness and insomnia. There was no vomiting, but severe headaches were frequent in the past ten years.

**Later Symptoms.** The staggering became more marked, and he complained of constant dizziness. He had frequent, recurring attacks of "neuritis" of the right leg and nose, which were relieved by large doses of salicylates. He became mentally

depressed and worried over his condition, often saying, "I must have a brain tumor because of pressure in my head." He became more depressed, developed delusions of persecution and went to bed in February, 1930. His headache, weakness, and mental derangement grew gradually worse, but he was able to recognize his family and friends until the last. Two days before his death he had a mild convulsion or chill which was followed by fever and delirium. Following a hypodermic of morphine  $\frac{1}{4}$  grain, he became unconscious and died two days later.

He had had no previous illness of importance, operations or injuries. His habits were good, except that he drank coca cola excessively, as much as ten to twenty bottles daily. His father died of chronic nephritis at 63 years of age, and the mother died at 73 years of age of lobar pneumonia. It is interesting to note that one brother, 63 years of age, died of an obscure type of disease of the central nervous system, which was diagnosed by competent physicians as lethargic encephalitis. However, no necropsy was done. The family history is otherwise irrelevant.

This patient had been examined by a number of physicians. Dr. W. J. Jolly, Oklahoma City, had suspected a neurological lesion twenty years previously, but was unable to localize it.

The Wassermann and spinal fluid tests were repeatedly negative in every respect. Blood counts and urinalyses were irrelevant. The blood pressure was always low, ranging from 90-60 to 130-80. The knee jerks were exaggerated, Rhomberg was negative, Babinski, ankle and patellar clonus were negative.

Dr. D. D. McHenry, Oklahoma City, made repeated examinations of the eyes during the last three years and reported partial paralysis of the external rectus muscle. The eye grounds were negative, vision and the pupillary reflexes were normal.

Dr. George LaMotte, Oklahoma City, attended the patient immediately before death and made a diagnosis of cerebellar-pontine tumor.

Necropsy was limited to the brain. The accompanying photographs show the location and size of the tumor. It was pearly gray at the periphery, soft, brown and caseous in the center.

The microscopic examination revealed the tumor herein illustrated and described in the introduction.

#### SUMMARY

Cerebro-spinal epidermoid (cholesteatoma) is a very rare tumor. It is probably congenital and grows or becomes larger very slowly.

Since the diagnosis is difficult, epider-



moids are probably more common than literature indicates.

The case herein reported was the father of a local physician and the history reliable and unusual.

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#### PNEUMONIA DUE TO ASPIRATION OF LIPOIDS

According to John W. Pierson, Baltimore (*Journal A. M. A.*, Oct. 1, 1932), fats and oils are often aspirated into the lungs when given to young children either orally or by way of the nasopharynx. After oils have been aspirated and they reach the alveoli of the lungs, they cause a profound and rapid reaction which represents an effort on the part of the lungs to expel the foreign material. Extensive changes take place in the pulmonary structure in a few days. These changes are registered on the roentgenogram, but their interpretation is extremely difficult. The roentgen studies in lipid pneumonia often simulate those of tuberculosis, and it is almost impossible to differentiate these two processes, on a single x-ray film. Pneumonia due to lipoids occurs but rarely, but a lively realization of its possible existence in any given case will lead to its more frequent detection.

#### "STONE WALLS DO NOT A PRISON MAKE NOR IRON BARS A CAGE."

Winter is a jailer who shuts us all in from the fullest vitamin D value of sunlight. The baby becomes virtually a prisoner, in several senses: First of all, meteorologic observations prove that winter sunshine in most sections of the country averages 10 to 15 per cent less than summer sunshine. Secondly, the quality of the available sunshine is inferior due to the greater distance of the sun from the earth altering the angle of the sun's rays. Again, the hour of the day has an important bearing: At 8:30 A. M., there is an average loss of over 31%, and at 3:30 P. M., over 21%.

Furthermore, at this season, the mother is likely to bundle her baby to keep it warm, shutting out the sun from baby's skin; and in turning the carriage away from the wind, she may also turn the child's face away from the sun.

Moreover, as Dr. Alfred F. Hess has pointed out, "it has never been determined whether the skin of individuals varies in its content of ergosterol" (synthesized by the sun's rays into vitamin D) "or, again, whether this factor is equally distributed throughout the surface of the body."

While neither Mead's Viosterol in Oil 250 D nor Mead's 10 D Cod Liver Oil with Viosterol constitutes a substitute for sunshine, they do offer an effective controllable supplement especially important because the only natural foodstuff that contains appreciable quantities of vitamin D is egg-yolk. Unlike winter sunshine, the vitamin D value of Mead's antiricketic products does not vary from day to day or from hour to hour.

#### THE IMPORTANCE OF EARLY DIAGNOSIS IN TUMOR OF THE BRAIN

HARRY WILKINS, M.D.  
OKLAHOMA CITY

We have, throughout our medical career, heard the cry for early diagnosis in every disease with which we deal. In some diseases, it prevents their dissemination by contact with other people. In others, the prognosis with an early diagnosis is a valuable aid to the economic management of the case. In every disease, it permits the application of the proper treatment at a time when the treatment will do the most good and possibly effect a complete cure. I know of no disease in which the above remarks are more applicable than in cases of tumor of the brain.

In the late recognition of this all too frequent disease, the economic factor alone is worthy of interest, particularly at this time of financial stress. Not infrequently, extensive and expensive procedures are resorted to which fail to give a clue as to the cause of symptoms. Sometimes the symptoms of vomiting and headache are thought to be due to pathology in the abdomen that goes unproven at operation and the patient's symptoms persist. Glasses may be fitted and refitted in the attempt to correct the visual disorder without success. A large number of people seek aid from osteopaths, chiropractors and various charlatans who promise wonderful cures. This necessitates the expenditure of considerable money. We, as physicians and surgeons, need not consider the economic factors further, as the duty we have to perform is that of administering to the sick in a way that gives the maximum relief. If it is impossible to effect a cure, our next duty should be to give the maximum symptomatic relief. This is a poor substitute for a cure, especially when important cerebral functions are permanently impaired. For instance the vision, the muscular control of an extremity or some permanent mental defects as produced by the growth itself or its surgical removal.

I recently saw a patient with a typical syndrome of an auditory nerve tumor. Her symptoms had been present for years. For one year she has had complete loss of vision resulting from the marked increase of intra-cranial pressure resulting in secondary optic atrophy. She refused surgical treatment offered to save her life, re-

lieve her headache, vomiting and disturbance in gait, as I could not promise restoration of vision. She chose the route to certain, early death rather than go through the remainder of her life without useful vision.

In the late cases of cerebral glioma, we occasionally find it necessary to resort to extensive block dissections to prevent extension and recurrence of the tumor growth. This may produce damage to a motor center, or a portion of the motor cortex may have to be removed, impairing the function of an extremity or other equally important functions. For example: W. W., a white girl, age 26, entered University Hospital in October, 1931, referred by Dr. Chas. Rayburn of Norman, Oklahoma. She gave a history of Jacksonian convulsions over a period of months. The removal of a glioma from the right frontoparietal region left a permanent loss of function in the left arm. We here sacrificed the use of the arm, but succeeded in saving her life.

Occasionally, the steps necessary for the removal of a large benign extra-cerebral tumor may leave permanent damage or impairment of a function or functions.

A. P., age 42, referred by Dr. J. J. Caviness, Oklahoma City, was admitted to University Hospital, February 20, 1932. He had a history of generalized convulsive seizures beginning twelve years ago. He had worked as a musician and comedian until recently, when his vision had failed rapidly. As the greater portion of his tumor, an endothelioma, was in the left middle fossa, it had to be approached from the left side. In the partial removal of this lesion, he sustained damage to the speech centers which incapacitated him for his particular type of work. Had the lesion been diagnosed early, its removal could have been executed without damage to surrounding structures.

I could go on at length, with such cases illustrating the loss of cerebral function that accompanies the late diagnosis of brain lesions. The time will be spent to greater advantage by refreshing our memories with some of the symptoms or signs which may give the clue to an early diagnosis.

We are all familiar with the great triad in the past considered necessary to the diagnosis of brain tumor, namely, choked discs, headache and vomiting. Too often we depend on these things for our diag-

nosis and in so doing, lose valuable time. It is true that these may all be present and sometimes occur early in the course of neo-plastic growth, particularly if the growth is at a point where obstruction to the flow of cerebro-spinal fluid causes a general increase of intra-cranial pressure. If, on the other hand, the lesion is located at a point where such an obstruction fails to occur or occurs late in the disease, the tumor may reach enormous size before any one or all of these symptoms appear.

The enumeration of some symptoms of generalized intra-cranial pressure is worthy of your attention at this time.

Generalized convulsions have been known to be produced by a general increase of intra-cranial pressure. Drowsiness and stupor accompany increased pressure but as a rule occur as very late symptoms. Yawning and scratching the nose incessantly, has frequently been observed. A unilateral weakness of the lateral rectus of the eye, (as supplied by the 6th cranial nerve), has been a frequent sign of general pressure as described by Cushing<sup>1</sup>, who has given us definite anatomical proof for his statements regarding strangulation of this nerve. In addition to vomiting, other medullary symptoms sometimes occur. A patient will show retardation of the pulse and respiratory rate particularly, if edema accompanies the growth or, if a rapid rise in pressure should occur, as with hemorrhage into a tumor. Frequently, an early choked disc may be missed, if we fail to use the ophthalmoscope to examine the patient's eyes, as a more or less routine procedure.

The X-ray plate may give evidence of increased pressure. In the adult, this may appear as a generalized convolutional marking in the skull. Sachs<sup>2</sup>, has called our attention to a localized convolutional marking in the temporal region, which he believes is an early evidence of increased pressure. In children up to the age of 16 years, generalized convolutional markings are insignificant unless accompanied by separation of the suture lines. In children or persons with soft cranial bones, pressure for a shorter time will produce these impressions that only appear late in the adult.

More important than these general signs, we have numerous signs of a focal nature, that suggest the presence of a tumor early in its course. A volume would be required to give a clear concept of this particular phase, if discussed in detail,



and as our time will not permit a lengthy discussion, I will touch the more important points very briefly.

Impairment in the function of the various cranial nerves, may give a lead.

A unilateral loss of smell is very significant in that a tumor at the base of the frontal lobe may affect the olfactory nerve by direct pressure.

Disturbance in vision is a frequent symptom of intra-cranial tumor. A frontal tumor may press directly on one optic nerve, causing blindness from a primary optic atrophy and choking of the opposite disc as brought to our attention by Foster Kennedy<sup>2</sup>. The various field defects too, may be of significance, since the bi-temporal field defect is an early sign of pituitary tumor, the homonomous superior quadratic defect a result of a temporal lesion and the more complete homonomous defects occur with tumors posteriorly in the occipital lobe. The choked disc, although a late sign of tumor, is itself frequently passed up for weeks, until marked visual impairment exists, because we fail to examine the eye grounds.

Involvement of the third, fourth or sixth nerves, aside from the impairment of the sixth, due to general increase of pressure as previously mentioned, will be found in lesions about the tip of the temporal lobe and may be accompanied by pain in the ophthalmic division of the fifth nerve. Aneurysms of the internal carotid artery frequently give this syndrome.

Trigeminal nerve involvement, particularly the continuous pain and motor fifth paralysis, may lead to the diagnosis of a very rare lesion, namely, tumor of the Gasserian ganglion. Numbness in the fifth nerve distribution may be associated with a cerebellar-pontine angle tumor pressing on the posterior root of the fifth cranial nerve.

Weakness of the lower facial muscles as supplied by the seventh nerve may appear early in frontal or temporo-frontal lesions. I wish to caution you here to look for the slight sagging at the angle of the mouth which may be seen with the patient's face in repose or in talking, but absent on voluntary innervation of the face.

Unilateral loss of hearing with tinnitus aurium, vertigo and accompanying neighboring nerve involvement, with the occasional added symptoms of cerebellar involvement, should warn one to be on the

lookout for an acoustic nerve tumor, a benign but dangerous lesion.

The other cranial nerves rarely show early evidence of tumor and we will not discuss the part they play at this time.

Symptoms of localizing value applicable to the various cranial lobes are very important. We have learned that impaired memory, changes in personality, lack of care of one's personal appearance and lack of concern regarding one's condition or impending dangers, are frequently seen in frontal lobe lesions. These symptoms with associated contra-lateral facial weakness, contra-lateral, exaggerated tendon reflexes and speech defects if on the left side in right handed persons or on the right side in left handed individuals, are very strong proof of a frontal tumor even if headache, vomiting and choked discs are all absent. Fronto-parietal tumors will either cause irritation (Jacksonian convulsions), or paresis (weakness) or paralysis on the contra-lateral side with the accompanying exaggerated reflexes, positive Babinski. Oppenheim and Chaddock, absent abdominal reflexes and clonus at the knee and ankle. Parietal lobe lesions in addition to giving sensory impairment on the contra-lateral side, may cause a loss of ability to recognize objects placed in the contra-lateral hand. This loss of stereognostic sense, was first described by Mills<sup>4</sup> in 1901.

Temporal lobe lesions may cause impairment of the pyramidal tract function if large. Smaller lesions may be discovered from the homonomous superior quadratic visual field defect as found by perimetric test. A group of fibers, known as Myer's<sup>5</sup> loop have been found to pass through the temporal lobe supplying this area of the retina. Of course, temporal lobe lesions on the side of the speech center cause aphasia of a varying degree. Lesions toward the inferior mesial surface of the temporal lobe, cause attacks known as "uncinate" fits. The patient has a momentary dreamy state, associated with an olfactory hallucination. One patient, whose symptoms had been present for years, first had just this syndrome to which no attention was paid. A benign extra cerebral tumor, causing pressure in this region, produced the attacks. Recently, we removed a temporal lobe tumor from a young farmer of 32 years, who had never experienced headaches, vomiting or choked discs. He, in fact, had no lateralizing signs and a ventriculogram had to be resorted

to, to direct us to the side of his lesion. He came through without the slightest impairment of cerebral function.

The occipital lobe lesions give characteristic symptoms that should result in an early diagnosis. If the lesion gives cortical irritation, there will be subjective visual symptoms. The patient will complain of seeing flashes of light or highly colored objects all of which are hallucinatory in type. The destructive lesion produces a contra-lateral homonomous field defect of varying degree depending on its position. Those located further back give complete, while those well forward give only partial defects.

Although cerebellar tumors and other tumors in the posterior fossa as a rule give obstructive signs and marked general increase of intra-cranial pressure early, symptoms or signs may be found to give a clue to diagnosis early. Nystagmus, homolateral ataxia and incoordination, staggering or unsteady gait, walking with a broad base and cranial nerve involvement may appear early in the course of the disease and should call our attention to other signs that help in making a diagnosis.

X-ray plates of the skull should be scrutinized carefully for changes that denote the presence of a tumor. In from 8 to 10% of tumor cases according to Sachs<sup>6</sup>, shadows may be visible in the X-ray. Thickening of the bone, may occur over a tumor, particularly the so-called meningiomas. Erosion of the bone, particularly about the region of the sella, may occur because of an adjacent neoplasm or from general increased intra-cranial pressure. Separation of the suture lines and convolutional marking have already been mentioned as evidence of increased pressure.

Since the work of Dandy<sup>7</sup>, we have had a very valuable adjunct not only to the localization of brain tumors, but to the early diagnosis as well. By replacing the ventricular fluid with air, visualization of the ventricular system may be accomplished with the X-ray. The head can be manipulated to show any defect as produced by a tumor. Certain dangers accompany its use so that we only resort to it when the diagnosis cannot otherwise be made. I have a few slides to exhibit at this time, from the Surgical Service at the University Hospital, in addition to the slides showing the normal ventricular sys-

tem as outlined; there are a few representative plates from cases with tumors in various positions.

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DISCUSSION: *Dr. Ned Smith*, Tulsa.

I shall not detain you but a very short time. Neurological surgery is certainly progressive. Where the surgeon has an inclination towards the central nervous system he finds something interesting and uncommon. Objective symptoms should be referred to brain tumor until it is clearly ruled out. I know of one patient who had one for three months; tumor was suspected but could not be definitely established. A sudden death may occur in brain tumor at any time. That should temper our diagnosis. I believe some of the later work regarding the exact pathological classification of brain tumors is of considerable importance. The prognosis can be put on a surer foundation, and where the tumor cannot be completely taken out at operation, we can determine our treatment. The symptoms are usually sympathetic. In brain tumor early diagnosis certainly gives better satisfaction. When I first came to Oklahoma I sent all my brain tumor cases out of the State. I don't have to do that any more.

*Dr. Wilkins*: I am very glad that Dr. Smith called attention particularly to the pathological study made in recent years, which may be of use to us not only in prognosis but also in treatment, and may give our patient a much better chance for recovery.



## TRIGEMINAL NEURALGIA ✓

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SHAWNEE

Trigeminal neuralgia, tic douloureux, or epileptiform tic, like brain and spinal cord tumors, is chiefly of interest to us because it is to us that these cases come for early diagnosis. So it is that we must acquaint ourselves concerning their diagnosis and treatment even though these cases properly belong to the neurological surgeon.

Trigeminal neuralgia is a disease of the gasserian ganglion of unknown etiology characterized by symptoms of periodic severe attacks or excruciating or lightning like pains starting usually in the maxillary division of the trigeminal nerve and spreading to all the other divisions, lasting from a few seconds to a few minutes.

Like other diseases of unknown etiology trigeminal neuralgia has been said to be caused by foci of infection and general debility. However, such men as Cushing, Adson, Sachs, Davis, Frazier and others interested in this entity have failed to note one single improvement after eradication of all visible foci of infection.

The diagnosis of trigeminal neuralgia is not difficult and is differentiated from the usual neuralgias of the face caused by dental caries and sinus infection by its severity and periodicity with each attack increasing in severity and duration until the pain is more or less constant. And if a patient comes to us stating that six years ago on a Friday afternoon while he was chopping cotton that without any warning whatsoever he was seized with a sharp, terrific electric pain that felt as though someone was searing his face about the naso labial fold with a hot soldering iron and that after a few minutes the pain had completely disappeared leaving him exhausted, and if he adds that the attacks at first occurring only in the day time about once or twice a year, lasting only a few seconds have gradually increased in number and severity, sometimes now occurring at night, and that the attacks are now brought on by chewing, washing his face, cleaning his teeth or by mere talking, and that in the past few years he has had his teeth pulled and several sinus operations in ill advised attempts to stop the pain, then we can rest assured that we have a severe typical case of trigeminal neuralgia.

On examination if the patient is not having an attack he will cringe away and hold off the hands of the examiner for fear that he will touch the trigger zone and elicit an attack. If the patient is in an attack or one is elicited by scratching along the upper lip of the affected side the patient will often go through all sorts of contortions, rub his face or bend forward in an attempt to get relief.

There are several other features of interest in trigeminal neuralgia, for instance it occurs most commonly about the age of thirty-five. The pain starts more often from the maxillary and mandibular branches and radiates through all the other divisions. Also it is not uncommon to find that a case in which the pain starts in the maxillary division that the trigger zone is along the chin, or in other cases of primary mandibular involvement the trigger zone is along the naso labial fold. Primary involvement of the ophthalmic division is not the rule, however, it occurs. Also the disease is occasionally bilateral.

The treatment of trigeminal neuralgia is of two recognized forms, one palliative and one curative. As far back as 1874, Bartholow used chloroform for injection into neuralgic nerves. Neuber and Billroth in 1884 used osmic acid in injections but with nothing more than transient results. In 1902 and 1903 Verger and Schlosser began injecting the nerves with alcohol at their foramina exit from the skull and in 1907 the method was improved and brought to this country.

However, at best, alcoholic injections of the trigeminal divisions or gasserian ganglion are only palliative in as much as the relief from pain only lasts about six months and not infrequently the injections are attended by complications such as paralysis of the motor root and thereby paralysis of the muscles of mastication on the same side and in inexperienced hands sloughing, secondary hemorrhage, and ugly scars are not infrequently seen. Nevertheless some authorities feel that the injection treatment is of value in that it teaches the patient what the numbness and anesthesia of the face is like and what he may expect if the more satisfactory and permanent operation of root section is done.

Few patients who have experienced true trigeminal neuralgia will complain of the permanent absolute numbness of the face and margin of the tongue which

unfortunately is a necessary result of root section, if they are assured that they will never again suffer from the pain they have endured in the past.

The intracranial operation for trigeminal neuralgia was first done by Rose in 1890, and modified by Hartley and Krause in 1892. The resection of the gasserian ganglion or division of the sensory root also destroys the ophthalmic division of the nerve and this leads occasionally to the formation of trophic corneal ulcers of the eye deprived of its innervation. In an effort to combat this, Frazier and others keeping in mind that the ophthalmic division is less often the seat of neuralgia, have been able to indentify the ophthalmic fibers and motor roots posterior to the ganglion and have devised a technique whereby those parts are not sectioned. They feel that should the ophthalmic division later become a source of pain that its division can be done at a later operation.

And so it is that the operative treatment of trigeminal neuralgia has been evolved in the past forty years and that we can now offer the patient a complete symptomatic cure by an operation that has no higher mortality than an abdominal operation would have on the same patient. However the etiological factors are still unknown and there is still great need for a more simple and satisfactory treatment.

#### CONSERVATIVE TREATMENT OF CHOLECYSTITIS

J. Tate Mason and J. M. Blackford, Seattle (Journal A. M. A., Sept. 10, 1932), report the results of a study which has confirmed their impression that in well defined chronic cholecystitis not relieved by medical treatment the operative results are most satisfactory. However contrary to usual surgical advice, chronic cholecystitis may, in approximately one third of the patients, be successfully treated along medical lines. The risk of developing a surgical emergency or calamity while under medical treatment is not greater than is the risk in the best elective gallbladder surgery. Patients who have allowed their gallbladder symptoms to go on for a number of years until their gastric acids have become low or absent, with definite and permanent pathologic process of the liver and biliary ducts, cannot expect as complete relief from choleystectomy as if they had accepted immediate operation. Hence the authors believes emphatically that when medical management fails to relieve promptly then operation should be urged on the patient. They emphasize the fact that patients with acute cholecystitis, empyema, jaundice or carcinoma were not included in their study.

#### EMOTIONS IN MEDICINE—THE INFERIORITY COMPLEX\*

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In the discussion of any paper dealing with a psychiatric problem it is entirely in order to discuss organic inheritance. There is a large school of medicine which today holds the older idea that every thought, every act, and every manifestation of human conduct comes out of the germ cell and is preconditioned at the moment of conception. There is another, but smaller school of psychiatry, which is accepting to a great extent the great and important researches which have been conducted by the psychologists whose researches lead them to believe that human conduct is the result of conditioning in the home. This word "conditioning" is taken from that type of psychology known as behaviorism and was conceived first by Professor Watson. There is another and perhaps larger school of medicine who are holding today that a great deal of human conduct does come out of organic inheritance, but that also there is a large amount of human conduct that is due to the action and reaction in the early home of the individual. Many of the best psychologists, educators, and psychiatrists believe that the training during the first ten years of life are very, very important. Sometimes this school combines organic inheritance and early conditioning, using the term social-inheritance, meaning, of course, a combination of inherited factors, together with the home conditioning.

At this point it is well to discuss the hypothetical thing we call the unconscious mind. This hypothetical thing represents to the psychiatrist that part of the mind of which the individual is or has become unaware. It is that part of the mind into which things are forgotten. The behaviorist calls this thing the "conditioned reflex." The difference between the two conceptions being that to the psychiatrist the unconscious mind is filled with emotion.

At this point it is well to define emotion. One can do no better than to repeat the definition of the great psychiatrist, William A. White, of Washington, who says: "emotion is the feeling mass of the

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individual." This means that emotion cannot be seen but can be felt. For example; we feel hate, we feel fear, we feel love. Emotion can be reasoned with only to a small extent. We can reason ourselves out of fear, we can reason ourselves out of hate, and we can reason ourselves out of love only to a small degree.

A short time ago, the writer was upon a program with Professor Hoisington, Professor of Psychology of our own State University. We were discussing the pros and cons of inheritance. Being a physician, I believed there was a great deal to organic inheritance, so I asked him this question, "who teaches the oriole to build her nest?" and a few other questions of similar importance. You may imagine my embarrassment when he informed me that an oriole hatched in a sparrow's nest, built a sparrow's nest and not an oriole's nest. This shows to us the tremendous importance of the early training of any animal, especially the child. In order to understand this terribly crippling thing, the inferiority complex, it is necessary for us to go back into our early lives. Some of us at a very early age were *scolded*, were *whipped*, and *punished* over and over again when necessary. We were commanded to do certain things, we were denied the privilege of doing things which we wished to do without reason and justice. At this point, I wish to say that it is necessary for every child to be definitely trained. Every child should be trained in obedience and in the observance of the other person's rights. Every child should be trained to meet reality and assume the duties of life without rebellion and crime; *but children should not be crushed*.

I will here attempt to give one mechanism of the inferiority complex. I will here define a word which is creeping into the literature, and that word is Narcissism. You will remember Narcissus who was the beautiful Greek youth, who looking into a clear pool of water, saw the reflection of his own beautiful picture, with which he fell in love. And, as the sun went down he lost this picture, and when he could no longer look at himself he pined away and died, and in the place grew the beautiful Narcissus flower. This means that the little child loves himself tremendously. He loves to look at himself, he loves to admire his body. This is Narcissism, a perfectly normal thing for a child of two, three, or four years of age, but abnormal for a man at twenty, thirty, or forty. In early life one is frequently scolded and

punished for unimportant acts; he may be severely punished for something for which he is not to blame. The result of this treatment wounds his infantile self love, which, to him is very important. No child should be wounded, whipped, and punished without reason. This child should be trained definitely but his spirit should not be broken. Sarcasm hurts the child and does more damage than whipping, and yet sarcastic remarks such as, "shut up, you little brat!" and "children should be seen and not heard," are frequently made. Many of us as little children were crushed and wounded. Our spirits were broken. We were made to feel somehow that we were very guilty of something.

The next step in the development of the inferiority complex is a very natural one and that is the sense of guilt. Here of course I am speaking of guilt in a pathological sense. We must remember at this point that a reasonable amount of a sense of guilt is necessary in the civilized life, that a moderate amount of the sense of guilt furnished the stuff of which a conscience is made. This moderate sense of guilt gives us the idea of right and wrong and without this normal sense of guilt, we have no conscience and no protection against our own criminal trends. We must have definite ideas of right and wrong. Now when our conscience has become pathological and we develop a pathological sense of guilt, we are then ill. Anyone with an abnormal sense of guilt can never do his best work in life. He will always feel that he has been a failure. If a nurse, she condemns herself for the manner in which she nursed that very severe case; and if a physician, he is always condemning himself because of the method he used in saving that critical case. He is always feeling that his neighbor can do the work better than he. He is always belittling himself. This sensation of being inferior is composed of emotion and can be cured by reason only to a small extent. Reason modifies only to a small extent the emotion of hate, fear, love, and depression.

The next step in this horrible mental state, which we call the inferiority complex, is the inferiority itself. We are whipped, and our spirits are crushed. We become thoroughly convinced that we are absolutely inferior to our neighbors. We constantly feel that another man can do the work better than we. We constantly feel that we are unworthy to live and are constantly making excuses for our very exist-

ence. No matter what we do, we condemn ourselves for the doing.

At this point I wish to digress and discuss one of the almost forbidden subjects in medicine. I wish to discuss the habit which 99% of boys, and most girls, develop at a certain age. The act about which so much is preached, so much is taught and talked, and about which more untruth has been said than all the rest of the normal, primitive evolution of life put together. This habit, which develops usually at puberty and about which much of the inferiorities are constellated, is the thing we call masturbation. This subject we must consider in the light of science belonging to the year 1932 and not a hundred years ago. As we study this act we find it well nigh universal and we have concluded that it is a perfectly normal part of the evolution of the normal boy, and if we leave him alone and be careful in our teaching, he passes through this stage of his development with no ill effects, passing on to the adult stage of the dream to be followed by marriage, home and children. Many a child has been ruined for life because of the unscientific treatment which he has received at puberty.

Another subject may be discussed at this time and that is, compensations for inferiorities. Many years ago I heard Professor White, of Washington, make the statement that all great things of life are done as compensations for inferiorities, either mental or physical. That is, that the individual with a marked inferiority attempts to solve his difficulties by obtaining a long list of degrees from colleges and universities, or he may become a great authority upon some subject as an attempt to make himself comfortable. Just one example: Professor A. B. Prescott, former Professor of Chemistry of the University of Michigan, who was teaching at 77 years of age and who had been upon crutches for seventy years as the result of infantile paralysis, was for forty years the leading authority in the world upon organic chemistry. He made a great compensation for an organ inferiority. We make the same compensations for mental inferiorities.

Another step in the development in this inferiority complex is the conviction that we must fail. There comes up out of the unconscious the conviction that we must fail and we therefore respond unconsciously by putting machinery in motion that

will cause our failure. Many a man has run away from success. Many a physician, and many a lawyer has run away from marked success just because he cannot properly evaluate himself and his inferiorities. For example, I have a friend who graduated from one of the leading medical colleges of America twelve years ago and who has lived in at least twelve different towns. Also a minister who goes into a locality and in a few weeks he is very prominent. At the end of six months he is held in very high esteem, and yet before the end of the year, he will have performed some act that drives him away from that success only to start over and fail again.

There is just one more step in this mechanism and that is complete annihilation and what can be more complete than suicide itself. Of course, as we said in the beginning of the paper, there is a great deal to organic inheritance. History of suicide in the family is very important. On the other hand, I am sure that the terrific treatment given to many of my patients has been a very large factor in the determination to die. For example, a father compelled a son at thirteen years of age to stand erect with both hands by his side while he used a horsewhip, cutting and slashing this boy. He was not allowed to cry out, was not allowed to move a muscle. He was compelled to look up through his tears and say: "yes, papa, I love you," while inside he was a volcano of hate. This boy was completely crushed and as a man of thirty-five years, he believes that he is a complete failure in life and that the only way out is through the door of suicide and into the grave. Every suicidal patient, whom I have had under observation, gives very much the same story. This man may suicide because of the terrific whippings which this savage father gave him as a boy.

Just how to treat the suicidal individual is a question, many of which individuals are occupying high places of trust and responsibility. I let them talk freely. I urge them to talk freely of their suicidal fantasies. Never criticize them in the least—they come for sympathy and understanding, not for a whipping. I believe it to be positively dangerous to use a particle of ridicule or sarcasm. Also it is a dangerous procedure to say: "no you won't!" or to say; "only fools do that." They may take the opposite of our well intentioned suggestions. They may go and suicide at



once. I sometimes ask the question if they really believe that suicide solves their troubles. Be careful when handling the human mind.

In conclusion, I wish to repeat that it is necessary for every boy and girl to be definitely trained in civilization. And also I wish to repeat that we must not crush the minds and souls of children.

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## THE MANAGEMENT OF ABORTIONS

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The frequency of abortions has greatly increased during the last three decades. Spontaneous abortions have increased considerably, but the percentage of criminal abortions has more than doubled since 1900. It is interesting to note that statistics show that only a small percentage of abortions in 1900 were criminal and that these few were performed on single girls, while today the married woman is the chief offender in criminal abortions. It is an appalling fact that today over 50% of abortions are either self induced or are performed by so-called specialists who consider that pregnancy is a disease that should be terminated before the end of the eighth week. The practice of criminal abortion has become such a menace that the lay periodicals and newspapers are discussing modes of curbing this evil.

In the United States alone there are approximately 700,000 abortions annually with a mortality of 15,000. Based upon an annual birth rate of 2,500,000, approximately 21 per cent of all pregnancies are terminated by abortions and as a result 2.15% die. Figuring the total population of the United States as 120,000,000 people, one of every 4,000 females dies annually from an abortion.

It is an interesting fact that in England it is estimated that 25% of all known pregnancies terminate in abortions; in Germany there are 1,000,000 abortions annually; in Russia where abortions are legalized there are 400,000 to 500,000 abortions annually. The death rates of these nations are approximately the same as ours with the exception of Russia where it is much lower. These figures may be interpreted to show that the economic standing of a nation has a decided bearing on criminal abortions, but has very little effect on the percentage of spontaneous abortions.

From a study of 1724 cases of criminal abortion deaths it was noted that 1567 were white women while only 257 were negroes. Again, in 10,000 spontaneous abortions, the mortality rate of 3.7 white women to 7.9 colored women. This shows that negroes do not perform criminal abortions and that white women do, as the spontaneous mortality rate among the colored is twice as great as among the

### PRIMARY ACTINOMYCOSIS OF TONGUE

Olin J. Cameron, Ann Arbor, Mich. (Journal A. M. A., Oct. 1, 1932), reviews the literature on primary actinomycosis of the tongue and to it adds two cases, bringing the total to fifty-five cases, thirty-six proved microscopically. In those cases which have been seen very early, presenting a firm small nodule in the tongue, excision and primary closure followed by roentgenotherapy (or radium) applied to the tongue, with fairly large doses of potassium iodide internally, has practically always resulted in a permanent cure. The author's first case presented a probable granulomatous recurrence twenty-one days after excision (no x-rays used at the time); the "recurrence" involuted promptly with roentgenotherapy and potassium iodide given internally. It has been found that when a frank abscess or multiple sites of fluctuation with sinuses appear, incision of the abscesses to establish drainage is necessary. The abscess walls should be curetted, the curetting saved and the pus obtained for careful pathologic search for ray fungus colonies; in addition, a portion of the specimen should be used for aerobic and anaerobic culture. It is widely recommended that after incision the abscess should be swabbed out daily with half-strength tincture of iodine and a mouth wash (1:4,000 potassium permanganate) employed three times a day. At this stage local roentgen or radium therapy to the tongue has been used almost routinely of late years, beginning soon after incision. Although much mention is made of the use of x-rays and radium in this condition, practically no mention is made in the case reports as to dosage. In one of the author's cases lightly filtered x-rays, with from 100 to 125 roentgens (one-third erythema dose) weekly for four or five doses proved sufficient; in the other case, one dose of 300 roentgens, well filtered, sufficed. Potassium iodide internally has been used in most cases on record: Doses of 30 grains (2 Gm.) three times daily, increasing to 90 grains (6 Gm.) three times daily, were effective in the cases reported here. If submental abscess nodule formation occurs by extension, daily opening of fluctuant regions and the insertion of iodoform gauze drains have been found necessary; when this occurs, the x-rays should be directed toward the base of the tongue via the submental approach as well as to the dorsum (cross-fire). The use of copper sulphate stick locally and one-fourth grain (16.2 mg.) doses by mouth are recommended, but the author cannot judge the value of this treatment.

white race and the criminal death rate among the white women is five times as great as among the colored.

The medical profession may not be able to control this crime to any great degree, but it can establish a definite routine in handling these cases so as to reduce the mortality rate. The surgeons have a routine method of handling wounds which are questionably infected, thereby reducing the mortality and morbidity rate. Why is there not a rational routine for handling abortions?

Spontaneous abortions are also on the increase. Whether more careful prenatal care will correct this evil is still to be proven. Aside from the disorders of the generative tract (myomata of uterus, retroversions, cervicitis, lacerated cervix), the diseases of the fetus and appendages (diseases of amnion and chorion or maldevelopment of fetus), possibly our present day mode of living rather than physical disorders is responsible for this increase. In support of this statement my records show that 5% of the cases under my care abort, while 15% of all pregnancies seen by me abort, the last 10% being seen after the abortion is well under way, and of this 10%, 8% are criminal and 2% spontaneous. Of the 5% who have been receiving my prenatal care, in only 1.2% were we able to account for the abortion by maternal or fetal pathology, while in the 3.8% we find that "habitual aborter" and those due to society (automobiles, dance, golf, etc).

The fingers of the over zealous, inquisitive physician are also responsible for many abortions as the trauma produced by a rough or careless digital examination is enough to complete the chorionic villae separation. Usually if women with threatened abortions are left entirely alone they will complete the pregnancy. The symptoms of abortion are so clear cut in practically all cases that a vaginal examination is unnecessary, hence contra indicated rather than indicated. In a series of 1000 pregnant women there were 8% that had uterine bleeding with an associated backache, 5% of them aborted and the remaining 3% continued their pregnancy to term. It is impossible to state whether this 3% would have aborted had they been examined, but it is obvious they were not injured from lack of an examination. It is not to be understood that a vaginal examination is contra indicated in all cases; for if there be any reason to doubt the diagnosis,

a vaginal examination is indicated, and it should be carried out aseptically, and with the least amount of trauma necessary to obtain the desired information.

In classifying these cases all should be considered as infected abortions until they have been proven otherwise, as in at least 50% of spontaneous abortions there is a pre-existing infection (cervicitis, metritis, parametritis, salpingitis). As all criminal abortions, which are more than 50% of all abortions, are potentially infected cases, it would seem plausible to classify all as being potentially infected until they have passed a period of time to rule out an infection.

Before discussing the treatment of abortions we should have at least an idea as to the pathological changes that are taking place within the generative tract.

Up until the formation of the placenta, which is approximately the third month, there exists one of three conditions. The chorionic villae may be separated from their uterine attachments by either *disease of the uterus* (myomata, metritis, cervicitis, etc.); *disease of the chorion*; *death of the fetus, or trauma* (sex relation, retroversion, irritable uterus, instrumentations, automobiles, etc).

In considering the diseases of the fetus and appendages we must exclude syphilis as some authorities have proven to their own satisfaction, that the spirocheta does not invade the fetal appendages and fetus until after the fourth month. Fetal development defects, which cause death of the fetus, probably form the greatest number of these cases, and the death of the fetus is responsible for the chorionic changes. Hypertrophic, atrophic and infectious changes within appendages cause only a few abortions.

Endometritis is the most frequent disease of the uterus, causing spontaneous abortion, and may be due to a bacillus infection, or to a coccal infection; the former involving the surface of the endometrium, only, and in which there is a collection of bacilli on the endometrium causing a necrosis, which is limited to the endometrium by a bank of white and granular cells surrounding it. The latter may be either streptococcus or staphylococcus or septic infection which is not limited to the endometrium but involves the myometrium, blood vessels and lymphatic channels.

Parametritis which is a pelvic cellulitis



that may or may not suppurate, perimetritis with its peritonitis cul-de-sac and peritubal abscess, and blood stream infections usually start from an endometritis.

Sapremia is also encountered in these cases. It is not unlikely that in fetal death it is the toxins liberated and taken up by the blood stream that are responsible for the chorionic villae changes. This, as its name indicates, is the result of the action of saphrophitic organisms on the decidual tissue causing a symptom complex, viz; chill, temperature 99-104 degrees, rapid pulse 100-160, malaise. Within the first days of the disorder it is not within the power of man to differentiate between it and acute endometritis. As to the pathology which develops after the third month, suffice to state that it is merely a matter of placental separation, either partial or complete, due to the location of the placenta praevia), or to toxemia or trauma causing a premature separation (abruptio placenta), or to uterine contractions due to syphilitic changes within the fetus or membranes, or to contractions due to death of the fetus in utero, or to external violence.

The treatment of abortions resolves itself into three phases: 1. Control of the hemorrhage and support of the patient. 2. Emptying the uterus. 3. Treatment of any complications.

It is to be emphasized that the curette is not to be used until after the febrile or possibility of a febrile state has passed, which in the total afebrile case is after the seventh or ninth day. Proof of this as a rational procedure will be attempted further on in this paper.

For supporting the patient, absolute rest in bed with the exhibition of sedatives, such as chloral hydrate, bromides, and morphine, are most effective. Chloral hydrate is probably superior to the other drugs, as it retards, even if it does not stop uterine contractions completely; while morphine relaxes the uterus, and, if all of the chorionic villae are detached, it relaxes the internal and external os of the cervix as well, thereby allowing the passage of the decidua. Water given as indicated, in large quantities, tends to lessen shock and prevent dehydration. In case of profuse hemorrhages, transfusions are indicated and have a tendency to lower the possibility of infection. Best results from transfusion are obtained by giving small quantities of blood (250-300 c.c.), every other day, and if it is impossible,

due to locality and facilities, autohaemotherapy of 10 c.c. of whole blood intramuscularly has proven of great benefit.

Oxytoxics have no place in the treatment of abortions until after the decidua, in its entirety, has been expelled. Pituitrin and ergot cause a spasm of the uterus and the lower uterine segment; thereby causing a constriction of the lower uterine segment, preventing the passage of the decidua, and constricting the point of drainage. Of these drugs, quinine is probably the best, as it causes a rythmical uterine contraction when given in small doses; but, when given in large doses, it causes a spasm of the uterus. Some authorities advocate their use in infected cases, being of the opinion that by increasing the tone of the uterine muscles they are improving the blood supply, hastening involution. This may be so, but it is probable that the advantages are overshadowed by the great disadvantage, namely: constricting the cervical os, thereby obstructing drainage. Food is essential and should be of the type used in the treatment of anaemias; but, after complications arise, it should be limited according to the condition of the intestinal tract. Otherwise the patient should be supported symptomatically.

Controlling of the hemorrhage is the point in which there is the greatest variation of opinion. Some men, at this point, use the curette in all cases; while others, in questionably infected cases, pack to control the hemorrhage. An excellent routine is to introduce under strict asepsis a bivalvue speculum into the vagina, visualizing the cervix and removing all the decidual tissue that may be occluding the cervix. Care must be taken not to pass the forceps to the fundus of the uterus, as the idea is to remove the decidual tissue that may be occluding the cervix, which if not removed prevents the uterus from contracting snugly over the exposed sinus; this, alone, causing the prolonged hemorrhage. It may be stated here that it is unusual not to find tissue occluding the cervix, but in case it is not present the vaginal canal should be packed tightly so that within 24 hours the cervix is dilated, at which time decidua is seen at the cervical os. I do not believe it is wise to pack the cervical or uterine canal, as the danger of transplanting an infection within the uterus is too great. In case the decidual tissue is in the cervical canal, remove all that can be removed easily and repeat the procedure with each sign of uterine bleeding. This procedure is carried out

until after the seventh day; after which, if the patient is afebrile and continues to bleed, she should be curetted.

The recognized method of controlling hemorrhage by the use of a curette is a dangerous procedure and should be used with considerable caution. If the indications for emptying the uterus appear before the third to the fifth day, the use of the curette is extremely dangerous, as it is impossible in a great many cases to sense the presence of an endometritis; if this be present, the curette may break down what barriers have been developed in the uterus, so that it is likely the infection is stirred up. If the patient is having a rise in temperature, regardless of the cause (sapremia, endometritis or perimetritis), a curettage is contra indicated, because one can never be positive as to the differentiation between sapremia, endometritis or septicemia. If the temperature be due to sapremia, curettage only tends to reduce the febrile period for a short time and the possibility of misconception of the case is so great that it is not advisable. When curettement is indicated it should be done with a sharp curette and as thoroughly as possible. The dull curette is treacherous, as the chorionic villae are densely interlocked into the uterine musculature and will not be removed by the curette. Allow me to emphasize, at this point, that uterine bleeding is the only indication for curettage.

The treatment of the complication resolves into the specific condition.

Sapremia and endometritis are easily confused—it is best to treat them alike. Sedation, fluids as indicated, moist heat over the lower abdomen, removal of the decidua as indicated; never curette until at least seventy-two hours have elapsed following a normal temperature.

Parametritis should be treated symptomatically with supportive methods, and by the use of hot rectal irrigations, and moist heat over the lower abdomen. No abscess should be opened until the patient has had about seventy-two hours to generate specific antibodies to the causative organism.

Perimetritis with its associated conditions (cul-de-sac abscess, peritonitis, etc.), is responsible for death in 60 to 70% of cases when present. The patient should be supported by transfusions or any supportive method that is indicated, should have hot packs applied over the abdomen and closely observed. Localized collections

of pus should not be drained until they have had ample time to localize.

Septicemia requires the same treatment as any other septic case. This condition may also be mistaken for sapremia and may, likewise, be harmed by the use of the curette.

Abortions after the third month are comparatively simple to treat and should be handled as indicated by the causative factor. The curette is contraindicated in all cases after the formation of the placenta.

In conclusion, I wish to stress the following points:

1. Consider all cases of threatened abortion as septic cases.
2. Do not make a digital examination in threatened abortion unless there be some question as to the diagnosis.
3. Control hemorrhage by a firm packing in the vagina.
4. Do not curette until after the seventh day.
5. All instrumentation before the seventh day should be the simple removal of decidual tissue from the vagina and cervical canal.
6. Febrile cases should not be curetted for from three to five days after cessation of the temperature.

#### —○— RECENT OBSERVATIONS IN SERUM DISEASE

Luke W. Hunt, Chicago (Journal A. M. A., Sept. 10, 1932), studied the records of serum disease as observed in the Durand Hospital since its establishment, nineteen years ago, and discusses in a brief manner some of the pertinent questions. Serum disease occurred in 28.1 per cent of 2,859 patients who received diphtheria antitoxin in 22.7 per cent of 858 patients who received scarlet fever antitoxin, and in 81.8 per cent of 55 patients who received antimeningococcus serum. The occurrence of a serum reaction after the injection of diphtheria and scarlet fever antitoxin is determined in part by the susceptibility of the individual, by the toxic properties of the serum, and, in the largest measure, by the total quantity of serum given. Concentrated diphtheria antitoxin calls forth reactions in about the same proportions as does whole serum in corresponding bulk. The serum reactions after the use of scarlet fever antitoxin were slightly less in frequency than those after the use of diphtheria antitoxin. They were not more severe. The incidence of serum disease does not vary widely in the various age groups. The interval between the injection and the appearance of the reaction varies from a few minutes to thirty days. The majority of the reactions appear before the eleventh day.



## OBSTETRICAL PROBLEMS ARISING IN THE PRE-NATAL PERIOD

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In keeping with the present trend of advancement in the medical sciences through the preventative phase of medical practice, I have elected to discuss some problems arising in the preventative medical field of obstetric practice.

I hope to arouse in the general practitioner a greater enthusiasm toward the possibilities of accomplishing inestimable good through the practice of pre-natal care. This I hope to accomplish by showing the necessity and practicability of giving pre-natal care by discussing some of the problems arising in the pre-natal period. Problems in which early care prevents later troubles.

Perhaps the most outstanding development in obstetric practice has been the establishment of pre-natal care as a definite part of the treatment of the obstetrical case; and the education of the laity to the extent of practically demanding that kind of observation from the physician. Instead of the patient engaging her physician, and perhaps not seeing him again until time for delivery, we find her going regularly at frequent intervals for observation and examination, and this to an increasing degree to the general practitioner. DeLee states<sup>2</sup>; "that 25,000 women die annually in the United States from the immediate and remote effects of childbirth. Statistics also show that 100,000 babies are born dead and 100,000 die within a few weeks after birth, these also, each and every year." He further states that it is safe to say that at least one-half the mothers and babies could be saved by proper obstetric care before and during labor, and the major part of the invalidism and wretchedness likewise could be prevented.

In the beginning of obstetrical care, two factors are presented upon which the success of adequate prenatal care must depend. These are the physician himself and his patient. If the pre-natal care is to be adequately carried out over a period of months, the attending physician must first have become well convinced of the possibilities of good to be accomplished from this field. He, himself, must have become enthused over this field of preventative medicine so that he, in turn, can pass along

to his patient this enthusiasm for especial care for her during the pre-natal period. She must also become interested in her problems. In these two factors lie the possibilities of success in carrying out pre-natal care throughout the entire developmental period. The patient who has not already been convinced of the good to be derived from pre-natal care must be adequately shown and convinced of the necessity for this care. In fact she must become enthused over the possibilities of good to be derived by her, if she is to be expected to go to the time and trouble of presenting herself regularly to the physician (and his waiting room) for her required visits.

In the beginning of a case a financial plan for giving pre-natal care should be worked out. It is best that the charge for the obstetrical services be large enough to justify the giving of pre-natal care. The patient should feel that there is no extra charge for each visit during her pre-natal care, else she most surely will defer her visits longer than requested, or come not at all. She must also receive very definite instructions on the most trivial matters if she is to be expected to keep her interest at sufficient height to justify her inconvenience of the regular visits. It is not sufficient for the physician to spend a few minutes in interrogations into her condition and then dismiss her on her statement that all is going well. She already was of this same opinion, and if no more than this history taking is done by the physician she quite probably will not return for the next scheduled pre-natal visit. To her, everything is still normal. Why make a trip to the doctor to tell him so?

For the physician to succeed with his plan of adequate pre-natal care, very definite records must be kept, and explicit instructions given. At the first visit of the patient, the obstetric history should be taken. Blank forms for this history are obtainable at a reasonable cost to the physician. On the one shown, sufficient space is allowed for a record of subsequent visits, at which time the blood pressure, weight, pulse, urine report and any medication given are noted. It is the accurate keeping of this record on which the point of successful pre-natal care hinges. It is in the meeting of the problems arising subsequently, in the foreseeing of future possible troubles and avoiding them, that complete success lies.

Following the taking and recording of

the obstetric history at the first visit, a complete physical examination should be made. The usual order may be changed somewhat here. The examination may properly begin with the gynecological examination in order to definitely establish the presumptive diagnosis of pregnancy. This may then be followed by pelvic mensuration, (in primipara) the taking of the blood Wassermann, and finally a most careful examination of the heart and lungs.

During this examination there should be a few kindly spoken words explaining to the patient the necessity and reason for the making of so complete an examination. She then is well in accord with the plan to give her such careful watching. But, when the examination is finished, there are many things she does not yet understand. There are many questions she wishes answered. It is here again that explicit and definite instructions are needed. Complicated or complex directions are to be avoided. A few direct and simple instructions should be given. This is best given in printed form to be studied after the patient is at home. If pregnancy progresses normally the simpler the management the better. Most problems arising in pregnancy however, begin in a simple form and become progressively more serious. Obviously a discussion of the many problems presented throughout the prenatal period cannot be detailed in so short a time as allowed for this presentation. I hope, however, to offer some suggestions for meeting some of the commoner problems, particularly as they pertain to preventative medicine in obstetrics.

The first of these often presenting is the oral and dental condition. It is a good plan at the conclusion of the first examination to request the patient to secure a dental examination, particularly so if the oral condition is not entirely satisfactory. The old slogan of for every pregnancy the loss of a tooth must no longer hold. If cavities, regardless of size, are present they should receive dental care. S. Sorrin<sup>3</sup>, as chief of the pyorrhea clinic of the New York College of Dentistry, has had an opportunity to examine the mouths of a number of pregnant women and to determine the condition of the teeth during pregnancy. He states that close observation indicates that patients lack the knowledge of proper diet and care during this period. In many instances the physician has not given the patient proper instruction as to diet and dental care. The loss of bone and

tooth structure during this period has been appalling. In order to secure a positive calcium balance, the mother has to take at least 1 gram of calcium daily, especially so during the last third of the gestational period.

The patient whose oral condition is not entirely satisfactory, is instructed to include in her diet:

1. Some form of calcium medication, as gluco-calcium wafers or a granular effervescing calcium preparation (calcilact or calcionates).

2. Orange juice twice daily.

3. Liberal helping of vegetables, viz, spinach, tomatoes (raw or cooked), cabbage (raw), lettuce and celery.

4. From a pint to a quart of milk daily. If this cannot be tolerated, cod liver oil (Viosterol) is given.

An alkaline mouth wash should also be used as recommended by Sorrin:

Phenolphthalein .....	gr. 2
Saccharin .....	gr. 5 to 7
Menthol .....	gr. 15
Calcium Oxide .....	gr. 100
Sodium Chloride .....	1 Lb.

Sig: Teasp. to  $\frac{3}{4}$  glass warm water.

Thus it may be seen that an ounce of prevention may prove of more value than a pound of cure.

Another problem arising in the early period of pregnancy is nausea and vomiting. This should receive the most exacting attention from the very beginning. Nausea alone is a distressing condition and should be alleviated as much as possible. Vomiting should be carefully inquired into. When the stomach loses its tolerance for all foods and liquids, when dehydration and loss of weight are beginning, it is imperative that early and appropriate measures be instituted at once. Yearly there are reported deaths from vomiting of pregnancy. In this field alone pre-natal care will more than fulfill its justification.

In the treatment of the simpler forms of nausea, and occasional morning vomiting, a few simple hygienic measures often will suffice. A most effective measure is a vacation for the expectant mother, away from the husband. If this cannot be arranged, separate beds for sleeping should be arranged and coitus strictly interdicted. Practically always in early pregnancy there is more or less



nervous tension. Rest and sedation are indicated. It is well to prescribe carefully, whatever medication is attempted. The patient should be given a tablet if liquids are poorly taken. Nothing could be worse than insisting upon the regular taking of an obnoxious medicine which itself incites a vomiting attack. A mild sedative tablet is best used if the patient is up and around. (The best of these thus far marketed is sedormid prepared by Roche). Constipation is likewise a troublesome factor often arising during this period. It is the height of folly to advise the use of magnesium sulphate, castor oil and other obnoxious laxative mixtures and lubricants. They can only increase the nausea or produce vomiting. Here again a dry form (tablet form—the best of these thus far marketed for this purpose is isacen—Roche. This is a tablet the size of a hypodermic tablet, and may be easily swallowed without water), is best used; together with a saline or soap suds enema when needed.

R. J. Crossen<sup>4</sup> and many other investigators, have shown that vomiting of pregnancy is due to deranged maternal metabolism with special reference to carbohydrate deficiency. Vomiting should be treated by supplying the deficiencies, viz, food fluids, and salts. Alkalies must be cautiously given, for there is either a normal acid base balance, or a compensated alkali excess. Constant watchfulness must be taken. If it is seen that hyperemesis gravidarum is eminent the early treatment of rest in bed, isolation, forced liquids, glucose intravenously (insulin if we find the sugar is not taken up) and sedatives must be instituted. Great care must be taken lest the favorable time for induction of abortion be not allowed to slip by. Early correction of nausea and vomiting through diet and sedation may prove life saving by preventing a fatal toxæmia.

Many of the complications incident to the pre-natal period and delivery can be avoided through proper supervision of diet and exercise. Pre-natal care might be said to be carried on along two different lines. One might be called the informative method and the other the preventative<sup>5</sup>. In the first, records are kept of the blood pressure, weight, pulse, urinalysis, etc.; and when abnormalities are found the proper treatment is prescribed. In the second or preventative method, besides

keeping these records, advice is given in an attempt to prevent complications.

At the first visit the patient is weighed and her height taken. The age, height, weight-chart is consulted and her appropriate weight is recorded. A normal gain of 15 to 20 pounds in weight is expected. Whether this is permitted is determined by the present weight of the patient, her age and type of build. If she is rather tall, inclined to long bones and generally underweight and of a ptotic type, she is encouraged to gain in weight and an appropriate diet is arranged. However, the opposite condition is more likely to prevail, viz a tendency to become over weight during pregnancy. In watching the weight of cases of pregnancy over a long period, statistics have become available to show that most of the patients who gained much weight, or gained too rapidly, had more complications than those who gained only moderately. The study of a considerable number of cases has proved that in general the patient who has gained weight only moderately and who has exercised regularly in the open air will seldom show signs of toxæmia unless the kidneys were damaged before pregnancy took place.

Diet alone can seldom be counted upon to control an excessive gain in weight. It is necessary to have the patient exercise in the open air. This exercise (walking) in the open air must be carefully insisted upon because most women contend they secure adequate exercise in doing the usual house work. Walking in the open improves metabolism better than anything else these patients can do, and by improving metabolism there is less toxæmia and less anemia. The regulation of weight by diet and exercise accomplishes several things:

1. The keeping of a regular weight graph for the patient keeps her interest in the problem up sufficiently that she is willing to cooperate.

2. And most important it helps to prevent toxæmia in a type of patient most prone to this unfortunate happening.

3. Patients are less anemic. Anemia arising during pregnancy is much more common than supposed. A close watch should be kept at all times for the development of this condition. Frequent hemoglobin estimations may be taken without undue time of the physician. As indicated, and where feasible a blood count should be obtained in cases presenting definite signs of anemia. Appropriate medication

should be instituted along with the diet and exercise.

4. It makes labor easier by reducing the amount of fat in the pelvis.

5. The size of the baby may be somewhat less than if the weight of the expectant mother is excessive.

In order to regulate this weight gain through dietary regime and the prescribing of exercise, it is necessary to give rather explicit instruction. The general tendency of these obese patients is for over eating and under-exercise regardless of very definite instructions.

As a rule there is not an excessive gain during the first trimester of pregnancy and the high carbohydrate diet usually can be adhered to. Milk, eggs, butter, and fruit should be taken in moderation. After three months the carbohydrates should be cut down and more fruit and vegetables added. The amount of milk taken should be proportional to the weight gain. Roughly speaking the gain during the first three months will not be great, then the gain each subsequent month should not exceed four pounds until the last two months; when the weight gain should not exceed half this amount. If, in spite of moderate diet and exercise, weight increases too rapidly, before signs of beginning toxæmia appear the diet should be further restricted as follows:

Twice weekly the regular meals are discontinued and the patient takes one glass of milk with a cracker at eight and eleven a. m., and two and five and eight p. m. Two oranges may be taken during the day and perhaps tea or coffee.

Some very interesting studies are being made on the basal metabolic rate of the patients who become too much over weight. A large percentage of them show a low basal metabolic rate and are definitely benefitted by thyroid medication. These obese patients likewise are troubled by constipation. This may usually be controlled by the use of dietetic measures together with agar and mineral oil. Occasionally they are much benefitted by the use of bile salts combined with cascara or phenolphthalein. Thus we may see how a closely supervised weight gain may definitely contribute to a lessening of the possibilities of later toxæmis. What greater reward could come than the prevention of the grim reaper of maternal deaths, eclampsia?

In the examination of the urine speci-

men the microscopical test should not be too often omitted. Pus resulting from a pyelitis is not uncommonly found even before symptoms have become manifest. Proper and early treatment instituted may prevent a serious complication from developing. The frequency of this condition should always be foremost in mind, and any unexplainable symptoms arising during the pre-natal period fully warrant a careful microscopical examination of a catheterized specimen of urine.

Many other problems of lesser consequence upward to the gravest of all, toxæmia of pregnancy may confront the physician during his months of piloting the expectant mother through the developmental period. His services have been most worthy, and his time well spent, when he can at the time of his last pre-natal examination assure his patient that she has approached her coming ordeal, like the finely trained athlete approaching the olympic tests, in the best of physical condition, and that she and her baby may expect to come through safely. This assurance to an anxious mother fully justifies again all the time spent in giving her adequate pre-natal care.

#### CONCLUSION

No originality is present in the preparation and presentation of this paper. The object has been to point out again the possibilities for preventative medicine as they arise in obstetric practice. There is no field in preventative medicine that offers the prospect of such glittering returns in saving human life and misery. (De Lee).

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DISCUSSION: *Dr. J. B. Miles*, Anadarko.

In discussing Dr. Emanuel's paper, I feel that he has covered very well the subject of pre-natal care from the preventative medical side and he has brought out many good points in which adequate pre-natal care has proven of much benefit. I would like to emphasize the necessity of pre-natal care and the duty of the attending physician to impress this fact on the patient's mind but before we can do this,



we, ourselves, must know the benefits derived from proper pre-natal care. Dr. Emanuel has given you vital statistics showing the appalling death rate in obstetrical practice in the United States and I believe that these figures can be lowered by the application of our present knowledge of medicine in preventing some of these problems from arising.

After overcoming the first problem with the patient about the necessity of pre-natal care, we have that problem of finances. I think that it is best to have one fee for the delivery and have it understood that the charge for pre-natal care is included in this fee but that if any special treatment is necessary there will be an added charge.

The next problem is getting the history, pregnancy record and physical examination. This pregnancy record should have the name, address, age, race, occupation; number of present pregnancy; family history; previous illness; menstrual history, when it began, frequency, duration, amount and pain; marriage history; husband's health; children, number, ages, weight at birth, number living, health, number dead and cause; character of previous pregnancies, labors and puerperiums; miscarriages, number, state of gestation, cause; last menstruation, first day, quickening, estimated confinement, nausea and vomiting; headache; edema; leukorrhea; urine and bowels. The examination should include head, neck, chest, breasts, cardio-vascular, skin, bones and joints, neuro-muscular, abdomen, uterus and foetus, genito-urinary, external and internal.

Other problems arising are complications due to acute and infectious diseases, such as: smallpox, scarlet fever, typhoid fever, pneumonia, influenza erysipelas and gonorrhea. Any of these diseases are liable to be contracted by the pregnant woman. Vaccinations and inoculations have removed the dread of small pox and typhoid fever. Pneumonia and influenza result in premature labor or abortion and very often with death of the mother. Avoiding contact with persons suffering from influenza and keeping the patient in a healthy state is about our only means of avoiding these conditions.

Then we have chronic infectious diseases, such as: tuberculosis, malaria and syphilis. If we see the patient before conception takes place, which is rarely the case, they should be advised not to be-

come pregnant until the disease is cured or arrested as in the case of tuberculosis. Then we have many other conditions which we must investigate during our physical examination. Many of the deaths occur from diseases of the circulatory and respiratory systems; chief among these are valvular lesions of the heart, myocarditis and endocarditis.

Next we take up the alimentary tract and the liver, chief offenders are gall stones, indigestion, salivation, gingivitis and dental caries.

Last but not least are the kidneys and urinary tract, chronic nephritis, diabetes and hematuria. By a periodical examination of the urine and the taking of the blood pressure, we are able to discover the early signs of nephritic toxemia, pre-eclamptic toxemia and eclampsia.

In conclusion, I wish to say that this is just a brief resume of Dr. Emanuel's paper and I hope that he has impressed on your minds the necessity of pre-natal care, and careful physical examination of the pregnant woman, when she entrusts herself in our care.

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#### COMMERCIALISM VS PROFESSIONALISM

Under this title the Journal of the Medical Society of New Jersey relates the story of the large manufacturers of a product extensively used for that reason, was, it seems, told by the representative of a powerful drug chain organization that it must make certain concessions to "modern merchandising methods," or else—. The first thing wanted was an extra discount. This was needed in order that the products in question might be advertised to the public. The advertising was deemed necessary in the interest of both the manufacturer and the chain organization which proposed to handle the products in question. The answer of the manufacturer was that he did not desire to advertise his products to the public. He prided himself that he advertised only to the medical profession. He felt that the public had no business prescribing for itself, even such a good product as he made.

"The retailer urged that goods such as those in question could be sold in larger quantities by displaying them in windows, advertising them in newspapers, and by the recommendation of clerks. The manufacturer did not want any of those procedures followed."

Such occurrences are an old story to ethical manufacturers, although the practicing physician doubtless is not ware of how much pressure is thus brought to bear.

S. M. A. Corporation not only refuses to participate in such unethical practices, but in addition every package of S. M. A. from the beginning has borne this injunction: "Use only on order and under supervision of a licensed physician. He will give you instructions."

## CASE REPORT OF CANCER OF THE UTERUS IN A TWENTY-SEVEN YEAR OLD PARA TWO

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Mrs. N. McC., came to the clinic May 28, 1932, stating that she needed an operation on account of "womb trouble." She brought a written report along from her family doctor who diagnosed her case as infected fibroid.

Her family history was essentially normal.

Her personal history revealed nothing in the way of previous serious illness nor operation.

She began menstruating at about 15 years of age with periods lasting four days at 24 to 36 day intervals, usually without pain. Had a full term normal pregnancy and delivery in 1928 and an abortion of unknown cause at two and one-half months in 1930.

### *Present complaint:*

1. A mixed bloody and whitish discharge of three months duration.
2. Pain in the pelvis, constantly.
3. Frequent urination but no burning.
4. Fever.

*Physical examination:* Tall, bony, white woman of 27 years, appeared older. Temperature 100, pulse 108, blood pressure 110-60. Teeth were poorly kept with many missing. Chest and heart negative. Abdomen regular in contour, thin type with no scars. A tender but smooth mass was palpable in the lower median portion. Vaginal examination revealed a smooth but bilaterally lacerated cervix. There was a thin bloody discharge oozing from the cervix. There was no erosin. Uterus was uniformly enlarged to the size of a grapefruit. It was exquisitely tender. It was in good anti-version.

*Laboratory:* Red blood count 3,620,000, hemoglobin 65%, white blood count 7,400. Urine: sp. gr. 1.010, acid, albumen negative, sugar and acetone negative, 1-2 leukocytes with occasional small clump of pus.

*Pre-operative diagnosis:* Fibroid uterus, infected.

*Operation:* A pan hysterectomy was done May 31, 1932, finding a uterus sitting upright uniformly enlarged to the

size of a grapefruit with a uniform tumor in its lower segment. No adhesions except it was noted the bladder was released from its anterior surface with unusual difficulty. The tubes were closed and contained an ounce or more of water each, ovaries degenerated with multiple small multilocular cysts. An attempt to recover all the cervix with the uterus failed on account of the softness and peculiar cutting qualities of the interior of the cervical canal. The lower portion, or about the external os of the cervix was left in order to have some tissue with which to bridge the pelvic floor. This tissue was soft and held sutures very poorly. Upon amputating the uterus near the external os of the cervix considerable free pus was liberated. On account of the unusual softness of the interior of this tumor a microscopic study was ordered, and a few days later a report of adeno-carcinoma of the uterus was received.

The patient developed a virulent infection in the operative field and had a slow and stormy post-operative convalescence.

She improved rapidly after a blood transfusion of 500 c.c. of whole blood on the eleventh operative day. She was given a temporary discharge from the hospital on the sixteenth post operative day. One week later the patient came to the office as directed. Her abdominal wound was healed. Her general condition was fair, but she complained of a watery vaginal discharge. Speculum exposure of the former cervical area revealed a roughened granular bleeding mass carcinomatous in appearance. Urine was slowly pouring down out of this tissue at apparently what had been the external os of the cervix. Patient was re-admitted to the hospital and this mass of tissue cauterized extensively and 50 mgms. of radium inserted into the center of it and left 24 hours. This making 1200 milligram hours of radium. Patient was instructed to return in eight weeks for another irradiation.

This case presents some individual peculiarities in that a diagnosis of carcinoma of the cervix was not suspected upon speculum examination of the cervix. There was no discoloration of the vaginal portion of the cervix. At operation on account of the tumorous involvement of the cervical canal and lower portion of the uterus and the microscopic examination being reported as adeno-carcinoma we conclude the cancer had for its origin some point within the proximal end of the cervical



canal. Its growth being progressively superolateral, the center of which being about the internal os.

If the diagnosis had been made prior to hysterectomy, no operation would have been done. A dilatation of the cervix and insertion of radium would have been the procedure of choice.

The trend of treatment in carcinoma of the cervix and lower uterine segment in the past fifteen years has been from surgery to irradiation. Floyd E. Keene and Robert A. Kimbrough of the University of Pennsylvania recently reported results obtained in the gynecology department, of 475 cases treated with radium; of this number 427 of the cases were traced. From 1913 to 1921 they did pan-hysterectomy and followed with radium. During the past eleven years they have operated only one patient. The remainder have been treated exclusively with radium. During the first half of this period they used radium in only the advanced cases with a curability of 11.37 per cent at the end of a five year period. From 1920 to 1926 both early and late cases received radium with a salvage of 18.28 per cent. Only five of their series of 475 cases got deep X-ray. The results were disappointing, though they expressed interest in deep X-ray in conjunction with radium on account of the enthusiastic reports elsewhere.

They report three primary deaths in the 475 cases. One died of pulmonary embolus on the sixth day; One died of septicemia on the fourteenth day, and one died of pelvic peritonitis on the twenty-seventh day.

It is interesting to note in the many cases reported here that the total dosage usually varied from 2400 to 4200 mg. hours.

At the Womans' Hospital in New York City, reported by Doctors Ward and Farrior, an initial dose of 2400 to 4200 mg. hours has been the custom.

The patients were followed up monthly throughout a five year period with re-radiation whenever evidence of recurrence was found within reach. They have not used the high voltage X-ray until within the last year.

There seems to be no question anymore that cancer of the cervix is properly dealt with through the use of radium. There are many peculiarities in technic and many alterations in dosage published in

the literature. I find many clinicians using an average initial dose of 2400 mgms. hours. Some recommend as high as 3600 mgm. hours initially. It seems logical to me that 1200 to 2400 mgm. hours initially gets the patient off to a fair start.

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#### TREATMENT OF CONGENITAL CLUBFEET: STUDY OF THE RESULTS IN TWO HUNDRED CASES

J. H. Kite, Decatur, Ga. (Journal A. M. A., Oct. 1, 1932), reports on a study he made of the results following several methods of treatment in 200 consecutive cases of congenital clubfeet, in order to determine the efficiency of the different methods of treatment and also to determine some of the factors that influence treatment. From a detailed study of 149 patients in the nonoperative group, he draws the following conclusions: 1. The duration of treatments has been shortened very little by beginning treatment at an early age. Counting the time to complete the initial treatment and all recurrences, the fifty children who started treatment under 1 year averaged only nine tenths of a week less than did the thirty-one who started treatment between 1 and 7 years. However, early treatment is strongly recommended because it seems to give better feet. 2. After the child begins to walk the duration of treatment becomes progressively longer. 3. The group treated twice a week showed a saving of 4.2 weeks over the group treated once a week. 4. It requires 1.4 weeks longer, on the average, to correct the deformity in boys than it does in girls. 5. Children who have been previously treated require, on the average, as long for the correction of their deformities as those who have never been treated. 6. Fifty per cent of the children with other congenital deformities had recurrences, while only 18 per cent of the otherwise normal children showed recurrences. 7. Children with other congenital deformities require, on the average, thirteen weeks longer for the correction of the clubfoot deformity. Eighty-eight per cent of all clubfooted children who have applied for treatment during the last seven years have been successfully corrected by the nonoperative method. These patients have been corrected by casts and wedgings without the use of an anesthetic or force. There have been fewer recurrences in this group than in the operative group, and the recurrences have been easier to correct. The operative groups showed fairly good anatomic feet, but, because of the stiffness and loss of elasticity in the feet, rather poor functional feet. The nonoperative group showed still better anatomic correction with almost no functional disability.

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#### ALLERGIC MIGRAINE

Albert H. Rowe, Oakland, Calif. (Journal A. M. A., Sept. 10, 1932), calls attention to the fact that food allergy as a frequent cause of migraine has been demonstrated. Of 130 patients treated by him, good results with the elimination of allergic foods occurred in 87 per cent of the 109 patients who gave good cooperation. The author's elimination diets, modified by positive skin reactions or a history of idiosyncrasies to specific foods, were effective in the determination and control of the food allergy.

## TRICHOMONAS VAGINALIS VAGINITIS

L. C. NORTHRUP, M.D.  
TULSA

During the past four years considerable attention has been given to the study of trichomonas vaginalis vaginitis, which is an invasion of the vaginal tract by a molite protozoan parasite.

The object of this paper is to emphasize the importance of recognizing the infection during a routine examination, and to present a treatment which I have found to be most effective.

During a period of twenty-six months, routine microscopic examination of fresh vaginal discharge taken from one hundred eighty private patients in my office revealed forty-two cases of trichomonas infection.

This organism was first described in 1837 by Donne. Since that time little has been added to our knowledge of the organism. Many authors dealing with this subject have expressed doubt as to pathogenicity. Davis believes that with few exceptions trichomonas vaginalis rather than the associated bacteria are the cause of the very annoying vaginitis with which these parasites are associated. My experience has been that all acute symptoms are usually relieved within a few hours after a treatment which kills most of the trichomonas.

The clinical diagnosis is based on a few characteristic findings. A scanty, thin, milky and somewhat frothy discharge with a disagreeable odor. Evidence of vaginal irritation in varying degrees of severity. Itching often quite distressing. Soreness in vagina which often extends into the pelvis is nearly always present. The vaginal membranes often bleed easily. Cervical erosions are common and will often heal spontaneously when the organisms are killed. I have found two cases in which Skeen's ducts were infected. And five cases associated with caruncles. The urethra often contains the organisms but I believe it is merely soiled and not infected. Urinary symptoms are usually absent.

The laboratory diagnosis of trichomonas vaginalis is very simple. A drop of fresh discharge is mixed with a drop of normal saline on a cover glass. This is examined under the microscope as a hanging drop.

The organisms can be readily seen under either high or low power. They are distinguished from pus cells by their active motility.

If the organism is found I believe your patient will be gratefully benefitted if you institute active treatment to rid her of this infection. The organism is quickly killed by most of the ordinary antiseptics and by dessication. Theoretically one thorough application of any common antiseptic should produce a cure. In practice this is far from the case. One of the first patients treated in my office was under constant observation and almost continuous treatment for a period of twenty-two months before she was entirely free from the trichomonas organism. All the workers in dealing with treatment emphasize the importance of thorough cleaning. For this purpose I use one percent metaphen solution in a good grade of liquid soap. The vagina is dilated with a four prong vaginal speculum. This enables me to clean carefully around the urethra as well as the vault. After cleaning, the vaginal membrane is dried with gauze and painted with a saturated solution of picric acid. I have found this to be more effective than mercurochrome, iodine, hexylresorcinol or methylene blue. The vagina is again dried and then it is packed full of powdered sulphur. A dry fluff of gauze is tucked in to hold the sulphur in place. Kleegman has recommended kaolin at this stage. I have found sulphur more effective. It is not objectionable to the patient. I certainly has drying properties and it is a parasiticide. The patient is instructed to remove the gauze next morning and take a cleansing douche with mild soap water. She then is to fill the vagina with a solution of lactic acid, one teaspoon lactic acid to pint water, she is instructed to press the lips of the labia around the douche tip to prevent the solution from running out, and to hold it for about two minutes. On the second day she returns to the office for another treatment. Usually two or three treatments are sufficient to allay all symptoms. Then the patient is told to continue the daily douche and the lactic acid instillation reporting once a week for test. She is instructed to continue douching throughout the menstrual period as the organisms obtain rapid growth during that time. At the end of four weeks testing if no organisms are found she discontinues the lactic acid and reports once a month for test.

I realize that we have not yet found a



specific for the treatment of trichomonas vaginalis vaginitis. I have tried all of the things recommended by Greenhill, Faulkner Davis, Mathilu, Kleegman and others. I have found them all effective to a certain extent.

#### SUMMARY

1. A routine examination for trichomonas vaginalis should be made on all gynecological patients.

2. If the organism is found treatment should be instituted.

3. Thorough cleansing followed by the use of powdered sulphur is most effective.

4. The use of lactic acid by the patient to restore the natural protective flora completes the treatment.

5. Careful watching over a long period of time will prevent recurrences.

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#### GRANULOPENIA AND AGRANULOCYTIC ANGINA

Henry Harkins, Chicago (Journal A. M. A., Oct. 1, 1932), collected reports of thirty-six cases of recurrent granulopenia from the literature. Seventeen cases of granulopenia were observed in the University of Chicago Hospitals. Eight of these seem to be primary granulopenia and in four more than one attack occurred. The etiology of primary granulopenia is as follows: (1) The oral lesions and sepsis are secondary to the granulopenia. (2) Primary granulopenia may be due to some endogenic factor such as allergy, endocrine disturbance or congenital deficiency of the bone marrow. (3) On the other hand, the causative factor may be an exogenic agent, acting either on a normal person or on a person with a special susceptibility. Unknown organisms, B. influenzae, and chemical poisons are to be considered. (4) The causative agent acts chiefly on the bone marrow. The author makes the following conclusions concerning the treatment of primary granulopenia: (1) Oral antiseptics merely delays the entrance of malignant organisms into the system. Conversely, attempts to restore the white cell count to normal will not save the patient's life if sepsis is too advanced. (2) Blood transfusion and roentgen rays are of no proved value. (3) Chemical agents intended to stimulate the bone marrow are in general ineffective. Some evidence has collected to indicate that nucleotide is of value in primary granulopenia. Nucleotide did not affect the course of granulopenia in acute benzene poisoning in rabbits

#### TREATMENT OF ALIMENTARY TOXICOSIS

Samuel Karelitz and Bela Schick, New York (Journal A. M. A., July 30, 1932), base their procedure in the treatment of alimentary toxicosis on the following simple, fundamental ideas: 1. Diarrhea and vomiting, once established, are no longer specific, but are symptoms of an aspecific hypersensitiveness of the gastro-intestinal tract. Everything, even water or tea, may irritate and may sustain or increase vomiting and diarrhea. 2. Dehydration is a secondary symptom due to loss of water mainly by vomiting, diarrhea and respiration. The diseased organism or, rather, the diseased cells are unable to retain either water or salts (plasma). There is a tendency to excrete fluid by way of the intestinal tract. This may occur to such an extent that the output of urine suffers until it is almost suppressed. All this leads to acidosis and blood concentration with accumulation of catabolic products. Forcing fluid by mouth or even by parenteral administration does not necessarily lead to a sufficient retention of fluid. Even such forced fluid may be excreted in this undesired direction, namely, through the intestinal tract. The diarrheic character of the stools may continue, and the number of stools may increase. 3. The toxic symptoms of the disease are at least aggravated by dehydration. Therefore, of paramount importance in the authors' plan of therapy was: (a) more radical and longer than usual rest for the gastro-intestinal tract, and (b) treatment of dehydration with an intravenous supply of fluid. Since the fluid injected by venoclysis contains 5 per cent dextrose, complete oral starvation can be resorted to for a period of twelve hours, and the further omission of all food except water by the oral route can be continued for as long as is found necessary to stop all symptoms and restore the normal function of the intestinal tract. The dextrose serves as food (from 80 to 160 calories daily) as a diuretic and as a stimulant to the heart and other muscles; it probably replaces some of the glycogen in the liver, thus aiding the function of the liver, and it may help the metabolism of fat. The authors' treatment has now been carried out for the past two and one-half years. Among fifty-three cases, the mortality was six, or 12 per cent. This must be compared with an average mortality of 64 per cent for the preceding ten years at the same hospital. Five additional patients treated in other institutions by the same routine recovered. The children so treated showed an almost immediate general improvement after the venoclysis was started and an even more marked improvement after blood transfusion. The first evidences of improvement were a stronger pulse, better color, faster breathing, a clearer and more alert mental state, better turgor and increased kidney function. Acidosis disappeared and the chemical composition of the blood became normal. In every case vomiting ceased immediately. Abdominal distention occurred occasionally and was always regarded as a dangerous sign. The diarrhea was lessened in many cases, and it was completely stopped in ten children immediately after treatment was started. During 1931, the average duration of diarrhea after the starting of treatment was three days, with the maximum duration of nine days. The authors believe that their procedure represents decided progress in the treatment of severe forms of alimentary toxicosis.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### ALCOHOL AND THE PLIGHT OF OKLAHOMA CLINICS AND LABORATORIES

Quoting Section (69-82, Volume 2, Compiled Oklahoma Statutes, 1929) which reads in part as follows:

"The Governor is hereby authorized and empowered. . . . to prescribe rules and regulations in accordance with the Constitution and the laws of the United States, for the sale of pure grain alcohol for medicinal purposes. . . . and for the sale of alcohol for scientific purposes to such institutions, universities and colleges as are

authorized to procure the same, free of tax, under the laws of the United States; and for the sale of alcohol to any apothecary, druggist or pharmacist."

Other clauses permit hospitals to buy tax free alcohol under practically the same conditions.

One unusual situation has arisen in Oklahoma, however, in the case of bona fide clinics and laboratories. The federal authorities, or the commissioner having charge of the issuance of permits to Oklahoma, has ruled that clinics and laboratories are not covered by the present Oklahoma law, therefore these organizations are not permitted to legally acquire the alcohol which is absolutely necessary for their use. It is well understood that no clinic or laboratory can maintain proper service without the use of alcohol.

Obviously it is going to become necessary for the medical profession, those maintaining clinics and laboratories to attempt to secure passage of a law placing them in the same class as scientific institutions, universities and colleges, so far as the purchase of alcohol is concerned. This is going to be a difficult task, for those of experience well understand the difficulty in securing the enactment of any law. There are to be found, in the legislature, certain irascible opponents to the use of alcohol for any purpose whatever, the (bellwether) of such opponents usually being a fanatical church member or a politician afraid of such influences. Nevertheless it would seem that there is no reason why a committee of respectable physicians in each county should not be able to approach their representatives, lay the dilemma before them and ask that it be corrected by a short enactment in order to save clinics and laboratories from violating the law, which they must do if they continue to exist.

#### VETERANS' ADMINISTRATION—A LAYMAN'S IDEA

The September issue of the Oklahoma Legionnaire contains a report by the Chairman of the Rehabilitation Committee, Mr. Morton H. Harrison, Claremore. Among the recommendations made are some that no thinking physician and certainly no physician familiar with the thousands of rules and regulations which



must be followed by a physician of the Veterans' Bureau may be complied with.

The first impossible recommendation is—that a schedule of examinations be adopted by the regional office and hospital, that a certain number of examinations be made daily and that a committee of lay, three physicians, establish such schedule. There is also a suggestion that the working hours be extended.

In the first place very few private physicians have any idea of the magnitude and difficulty confronting physicians in the regional offices and Veterans' Hospitals. There is a vast difference between a mere clinical examination and devoid of the many, often necessary scientific aids. For instance, a man may claim he has arthritis, the films on the case may not be satisfactory and through no fault of either the technician making them or the physician reading them. But it is necessary that the patient be returned for a duplicate of the films. This prolongs the time of his examination and requires him to stay longer in the hospital. Then again he may come in for a very simple tonsillectomy, hemorrhoidectomy or simple appendectomy, when upon general examination it is found that the man has other disabilities. It may be discovered that he has very rapid heart or a noticable enlargement of the thyroid, and that calls for an X-ray of his heart and lungs plus a basal metabolism. All of this work requires further work and delay.

It is the opinion of the Journal that any attempt to step up the work now being done either in the regional office at Oklahoma City, or the Muskogee Hospital will result in either injustice to the man or the government.

Neuropsychiatric cases often are especially difficult to determine. For instance, a man may be sent in with a statement by a lay physician that he has epilepsy. No one under the sun will be able to diagnose that case unless he sees the man in an actual epileptic seizure. The above situation may be multiplied to a great degree but it is not necessary. One of the most irritating sources of delay in treatment for which many are hospitalized lies in the fact that upon examination of their blood it is shown that syphilis exists, the man may know nothing of it, except to recall what he thought was a simple sore and a simple treatment years ago. But no surgeon wants to operate upon the case until he knows it to be safe.

As a rule the work and management of regional offices and Veterans' Bureau Hospitals, is, in the main in very good, honest hands; men who desire to do both the man and government justice but these things require time and no lay physician is in a position to dictate the number of examinations which should be made in a day, nor does he know anything of the continuous, gruelling work that goes on from 8:00 A. M., to 3:30 P. M.

It might be said in passing that perhaps no physician in Oklahoma sees one-half as many cases in one day as the medical officer connected with the regional office and Veterans' Administration Hospital.

For these reasons we believe that these recommendations of the chairman are impracticable and cannot be carried out without doing harm.

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### THE PENROSE DRAIN

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In abdominal cases, where it is the judgment of the surgeon that drainage should be instituted, there is nothing, in the writer's opinion, more useful than what is known as the Penrose drain. Probably many surgeons use the Penrose drain without knowing that it was first devised or made by Dr. Charles B. Penrose, who happened to be a brother of the famous Pennsylvania Republican Senator.

The drain is simplicity itself and may be bought from various commercial houses. However, for many years, the writer has used something, which in the absence of a Penrose drain, he believes to be equally efficient, and I am not egotistical enough to believe that there is anything new about that, in fact as time goes on it appears that apparently there is nearly nothing new under the sun.

There is a strong objection to the use of strips and rolls of gauze for drainage; rolls of rubber or rubber tissue are much better, and where a large area is to be drained, sections of gauze may be rolled in rubber tissue in such a manner that the gauze does not come in contact with the omentum or intestine, thus giving the drainage necessary without danger of abrading the omentum or intestine which comes in contact with the drain. Removal of simple gauze drain is painful, while the removal of rolled rubber tissue, or gauze rolled in rubber tissue, is not pain-

ful, and they may be used in any number desired—down into the pelvis, up under the liver, and laterally as the conditions indicate.

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### YOUR MEMBERSHIP—SEE YOUR SECRETARY

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Annually we call attention to the fact that all memberships automatically expire December 31st of the year. Beginning in December and through January remittances from county secretaries are fairly heavy, so heavy that the office cannot keep up with them, therefore membership certificates are not issued the day upon which we receive them, and circumstances may cause many days delay, however, we try to get them out as early as possible. This year, the individual physician can do his unpaid county secretary a great service by looking after this matter immediately. It will save him, if he has the energy and inclination, telephoning or calling upon the doctor in the attempt to attend to the doctor's own business.

In January we write every member that his membership is about to expire. That costs money; later as a rule, and before finally striking their name from our lists, we write the members a personal letter. As a rule, practically everyone of these men come in at a later date, but there is no use postponing a matter which may be attended to by a little forethought, and one which we know you are going to attend to eventually in any event.

Removing names from rolls, cutting from mailing lists, notifying the American Medical Association of the fact, then have the member come in in the middle of the year, sometimes after the annual session, means that he has placed upon everyone unnecessary work and upon his association unnecessary expense, for this year postage is higher than ever. There is another feature of it: To date we have 1552 members. At the next annual session of the American Medical Association at Milwaukee, I believe the House of Delegates, under its constitution, must reapportion the number of delegates, etc. We have three delegates now because when the apportionment was formerly made we had more than 1600 members, but should the House of Delegates change the number, say to more than 800 (last year it was proposed to make it 850) then we would lose one delegate. Probably it will remain one delegate to 800 members or a fraction

thereof, so it will be necessary for us to find that extra 40 odd members, and they are easily obtainable over the State. For that reason alone—pride in our State organization—we should see to it that this little 40 odd members are secured.

See your secretary now and help everybody concerned to make the cleanest sweep possible.

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### Editorial Notes—Personal and General

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DR. McCLAIN ROGERS, Clinton, who has been ill with influenza is reported improved.

DOCTOR C. E. DeGROOT, Muskogee, attended the Kansas City Southwest Clinical Society meeting in October.

THE OKLAHOMA COUNTY AUXILIARY held its regular monthly meeting October 26th, at the Oklahoma Club.

DR. C. A. THOMPSON, Muskogee, will attend the Annual Conference of State Secretaries, to be held in Chicago, Palmer House, November 18, 19, 1932.

THE WOMAN'S AUXILIARY of the Southern Medical Group, meets at Birmingham, Ala., November 16-18, 1932, to which everyone is cordially invited.

AMERICAN COLLEGE OF PHYSICIANS will hold its Seventeenth Annual Clinical Session at Montreal, with headquarters at the Windsor Hotel, February, 6-10, 1933.

OKMULGEE-OKFUSKEE COUNTY MEDICAL SOCIETY met in joint session with the Muskogee County Medical Society, November 14, 1932, at the Severs Hotel, Muskogee.

THE WIVES of visiting physicians attending the Oklahoma City Clinical Society, November 1st, were entertained with a luncheon-bridge, held at the Oklahoma City Golf and Country Club.

THE WOMAN'S AUXILIARY of the Pottawatomie County Medical Society opened on Wednesday, September 28th, with the regular one o'clock luncheon at the home of Mrs. R. M. Anderson, Shawnee. These luncheons will be continued as the social part of the club.

THE CHAIRMAN of the Public Relations and Health program of the Woman's Auxiliary to the State Medical Association, Mrs. A. L. Blesh, 920 W. 20th St., Oklahoma City, has written a form letter to all County Auxiliaries urging that they acquaint themselves with the health needs of their respective counties.



A program of unusual features figured at the registration tea of the Oklahoma County Medical Society Auxillary held Tuesday afternoon, October 4th, at the Oklahoma Club. Prior to the program the new President, Mrs. A. R. Lewis, gave a response to the introductory remarks of the Program Chairman, Mrs. Arthur Haney. Musical numbers and a one-act play were presented. The program ended with two songs by the Sorosis sextette.

WOODWARD COUNTY MEDICAL SOCIETY held their monthly meeting October 4th, at Shattuck. Drs. O. C. Newman and J. P. Davis were hosts. The program consisted of: "Diseases of the Gall Bladder," by Dr. C. W. Tedrowe, who used X-ray pictures to illustrate the subject. Dr. Kingle of Perryton, Texas, addressed the group on "Use of Blood as a Therapeutic." Dr. Haskell Newman read a paper on "Treatment of Varicose Veins. Woodward will be host to the next meeting, which will be held December 6th.

WESTERN OKLAHOMA MEDICAL ASSOCIATION met October 11, 1932, at the Franklin Hotel, Mangum, for their quarterly meeting. The following program was given:

"Some of the Fundamental Principles of Infant Feeding," by Dr. C. J. Alexander, Clinton.

"Common Diseases of the Skin and Malignancies," by Dr. C. P. Bondurant, Oklahoma City.

"The Acute Surgical Abdomen," by Dr. Roy Fisher, Frederick.

"Brain Tumors," by Dr. Harry Wilkins, Oklahoma City.

MUSKOGEE COUNTY MEDICAL SOCIETY held a joint session with the Muskogee County Dental Society at the Town and Country Club, October 19th. Dinner was followed by an interesting program the speakers being: Drs. F. G. Dorwart, M.D., W. T. Jacobs, D.D.S., R. N. Holcombe, M.D., S. G. Weiss, D.D.S., all of Muskogee. Dr. T. H. McCarley, M.D., President-Elect, of the Oklahoma State Medical Association, of McAlester.

These meetings will be held bi-annually between these two societies.

MUSKOGEE COUNTY MEDICAL SOCIETY met at Muskogee September 26th. Thirty-five physicians, including three dentists were present. The following program was given:

"Secondary Anemia"—C. V. Rice, M.D., Muskogee.

"Melanoma"—F. J. Wilkiemeyer, M.D., Muskogee.

"Pulpless Teeth, Their Relationship to Neuritis and Rheumatism, When Best to Extract"—E. E. Overmyer, D.D.S., Muskogee.

"The Relationship of the General Practitioner to the Specialist"—T. T. Shackelford, M.D., Haskell.

PITTSBURG AND MUSKOGEE COUNTY MEDICAL SOCIETIES have arranged to hold joint meetings, Pittsburg County rendered a program at Muskogee, October 24, 1932, and Muskogee County will render one at McAlester, November 28, 1932. Sebastain County Medical Society (Ft. Smith, Arkansas) will render a program at Muskogee on December 12th, and the Muskogee County Society will render one at Fort Smith, in 1933, the date not yet decided upon.

These meetings will be very interesting, promoting better acquaintance between the physicians in this section of the State. All physicians are cordially invited to attend these meetings.

MUSKOGEE COUNTY MEDICAL SOCIETY met in joint session with the Okmulgee-Okfuskee County Medical Society at Beauclair Hotel, Okmulgee, Oklahoma, October 10th, 1932. The program was rendered entirely by members of the Muskogee Society, as follows:

"Athripsia," Dr. C. V. Rice.

"X-Ray Therapy in Graves Disease," Dr. L. S. Willour, McAlester.

"Cholelithiasis," I. B. Oldham.

"Veterans Administration," Dr. L. H. Webb.

"Purulent Peritonitis," Dr. H. Hutchings White.

Doctors Geo. N. Bilby, State Commissioner of Health and C. A. Thompson, Secretary, Oklahoma State Medical Association, were also present.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION met, October 20th, at Roebuck Lake, five miles south of Hugo. The following program was given:

"Malaria," by Dr. R. E. Wolfe, Hugo.

"Preventive Medicine," by Dr. R. D. Williams, Idabel.

Fish Fry Luncheon.

"Invocation," Rev. J. C. Babb, Pastor First Presbyterian Church, Hugo.

"Welcome Address," Hon. O. A. Brewer, County Attorney, Hugo.

"Response to Welcome Address," Dr. J. S. Fulton, Atoka.

"President's Annual Address," Dr. H. B. Fulton, Bokchito.

"Vertigo," Dr. R. L. Gee, Hugo.

"The Pneumonias in Childhood," Dr. T. H. McCarley, McAlester.

#### DOCTOR FRANK BILLINGS

Dr. Frank Billings, Chicago, died September 20th following a severe gastric hemorrhage. He was born in Wisconsin in 1854. Throughout his life he had given the best of his magnificent mind and great energy to the furtherance of medical teaching, the elevation of the medical profession and especially to the raising of the standard of medical education. Connected from his earliest days with Chicago Medical Schools, first with the Northwestern University Medical School, later with Rush Medical College and then with the University of Chicago, he became a great leader in American as well as international medicine. During his life time he has probably taught thousands of students in his specialty, internal medicine. It was at his insistence that the small preparatory medical schools either ceased to exist or merged into worth while medical colleges. This work began more than a quarter of a century ago. Past president of the American Medical Association, he was at all times one of the close advisors on many problems confronting that organization. The medical profession of the United States, in the death of Dr. Billings, loses one of its greatest men.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**The Prevention and Treatment of Abdominal Wall Excoriation in Gastric and Intestinal Fistulas by Copper Bronzing Powder.** By W. F. Cunningham, M.D., *A. M. A. Journal*, May 7, 1932, Page 1643.

For many years the excoriations on the skin of the abdominal wall associated with these fistulas have been treated by various ointments with negligible results.

In 1927 and again in 1929 Potter described the use of tenth-normal hydrochloric acid with beef juice associated with the feeding of from four to six ounces of boiled milk every four hours. In 1921, Erdman described an effective method of siphonage. Smith and Christensen in 1926 described the use of kaolin and glycerine. This work was confirmed in 1930 by Co Tui, who treated 31 intestinal fistulas with satisfactory results by the use of dry kaolin. When beef juice and tenth-normal hydrochloric acid were used, dressings were necessary every two hours; likewise, with kaolin or kaolin and glycerine, dressings must be changed every five or six hours according to the method described.

Since April, 1931, however, the author has been using copper bronzing powder, which in reality is pure electrolytic copper and is known to the trade as 180 to 200 mesh. It contains traces of stearate, which is used in lubrication, and iron, which results from the grinding. It is used as a dry powder or in suspension. Many of the commercial varieties obtained in paint shops contain other ingredients and their use is interdicted. In powder form or in suspension the author's experience is that he can prevent excoriation of the abdominal wall and can in some instances clear up established excoriation in from twenty-four to four-eight hours. One application of the suspension may last for several days. It is time saving, requires no dressing or nightly attention, is antiseptic, and he states that in the pure state this element is not poisonous.

The technic is simple. The copper is applied to the skin around the fistula as a dusting powder, being rubbed in thoroughly with the finger or cotton applicator, or a suspension is made up in bronzing liquid, one part of copper being used to about six of the suspending agent. This is painted on and dries in from one to two minutes. Venus bronzing liquid was selected as the suspending agent after many other combinations of varnish, drier and linseed oil were tried, because it is non-irritating and dries rapidly. The skin should be dry and meticulous care should be taken not to have any intestinal secretion pent up under the application. When the skin is not excoriated, copper suspension is indicated. If excoriation is present the powder is advisable until healing has taken place, following which

the suspension is used. In addition, the author uses the cradle with electric lights, mopping the gauze or syringe siphonage when the secretion is copious, and occasionally the duodenal tube when there is extensive loss of fluid.

The author's experience is limited to nine cases.

Fistulas of the gastro-intestinal tract may heal spontaneously, while the skin is being treated with various applications and abdominal wall excoriation may be prevented. The particular advantage derived from effective antiexcoriants is the retention of normal skin while the fistula is healing or the patient is undergoing supportive measures for future operative intervention. Pure bronzing powder of from 180 to 200 mesh is an extremely useful medium in the prevention and treatment of excoriation in fistulas of the gastro-intestinal tract.

**Comment:** We have employed the Potter technic for protection of the skin in the treatment of fistula of the gastro-intestinal tract with gratifying results. However, Dr. Cunningham's method of protecting the skin appeals to us, and we believe that it is a method that may be of great help in the control of this annoying condition.

—LeRoy D. Long, M.D.

**How to Treat Head Injuries and Appraise Them.** By Foster Kennedy, M.D., and S. Bernard Wortis, M.D., *A. M. A. Journal*, April 16, 1932, Page 1352.

These authors review a thousand cases of head injury. They have tabulated the presenting absolute signs, and they have also given in outline their plan of treatment. This plan is, so far as I am able to observe, practically the same as that which I have employed for several years following the lead of Dr. Temple Fay of Philadelphia. Among our abstracts in the *Journal* of March, 1932, was one thoroughly presenting the plan of treatment of Dr. Temple Fay.

In this article of Kennedy and Wortis, the most interesting section is that which deals with the appraisal of disability. The remote symptoms of head injury have become of late, masters of medical, sociological and economic importance. To appraise the degree of disability dependent upon any given head injury is therefore a medical and medicolegal concern. It should be stated that only a small minority of patients who have had head injuries, including skull fracture, return to the hospital later with any complaints. The physician must try to harmonize the known degree of injury, the subsequent history of the patient's symptoms, and his physical, especially neurologic condition. Dissonance in this trilogy must be viewed askance and arouse in him the suspicion of a suggested neurosis.

The following plan to determine the degree of disability dependent on structural neural injury is offered by these authors:

(a) Absolute criteria:

1. Roentgen evidence of skull fracture.
2. Bloody spinal fluid.



3. Bleeding or cerebrospinal fluid leakage from orifice especially from the ears.

4. Focal cerebral palsies.

(b) Presumptive criteria, in the order of their importance:

5. Convulsive states, proved post-traumatic.

6. Ventricular distortion, proved post-traumatic.

7. History of prolonged unconsciousness.

8. History of adequate trauma.

All these units are really measurable and are instrumental in establishing the fact of brain injury.

The absolute criteria plus seven and eight of the presumptive criteria can be accurately determined. Headache and dizziness, on the other hand, are unmeasurable factors following head injury, and if they persist for more than four months in a man under 60 ununited to any of the first seven premises of brain or meningeal injury, the authors believe that they arise not from structural neural change but from the adoption of an idea in agreement with an already established emotional trend; of such are the suggestion neuroses.

Persons suffering from neurotic symptoms after the occurrence of accident are best treated, medically and sociologically, by prompt and accurate diagnosis and treatment, speedy adjudication, and economic adjustment in a single settlement whenever possible. Such cases should then be closed beyond the possibility of being reopened.

—LeRoy D. Long, M.D.

**Low Back Strain.** E. G. Brackett, American Medical Association Journal, Volume 83, Page 1068.

The important and difficult element in the consideration of cases of back injury lies in the estimation of the actual value of the symptoms, compared with the evidence of the injury as obtained by the examination. The injuries involving both strains and actual damage possess symptoms and signs much in common, but which do not correspond in prominence to the degree of severity of the result occasioned by the violence, and this is particularly true of those symptoms which are easily intensified by the patient. The variation in the prominence of many of these signs naturally depends on the character and the severity of the accident, but the gravity of the injury is determined largely by the type of spine in question. As an aid in the determination of the gravity of the lesion in the low back, these cases of so-called strain may be considered from two points of view: first, in relation to the character of the violence causing the injury, and, second, in relation to the condition existing in the spine at the time of the injury.

#### Classes of Injury

First, considered in relation to the character of the injury, or to the condition under which the strain occurred: In general the injury occurs either as a local wrench, almost always in the lumbosacral area, or as a general strain involving a larger area, and in each, the mechanical etiology often has a direct bearing in the diagnosis, and also may be of aid in forming an estimate as to the degree of resulting disability. There are two special conditions under which the violence may be incurred in these back sprains. In

the one, it results from and during some severe muscular exertion on the part of the subject. In the other, it results from an external mechanical violence exerted on the subject, and independent of him.

The first deserves mention because of its frequency. It occurs as a result of undue force put on the ligamentous structures, while the back is in a position vulnerable to injury; i. e., with the patient leaning forward, and while the back is held in this forward flexed position, the patient makes a severe muscular exertion. In this type, the wrench may occur (a) while the patient is carrying a heavy load with one or more fellow workmen, and one or more of the men unexpectedly let go their hold, thus suddenly shifting the whole load on one or more of the group, which brings a sudden and unexpected strain to the back; or (b) while the patient is lifting a heavy weight from a low position, with the back fully flexed. In the former instance (a), the wrench occurs when the muscles are not in, and do not have time to be put in, full protective action, because of its unexpectedness. As a rule, the load is more than would be given to one man, and is too great to be borne by the ligamentous structures alone, unprotected by the muscles, and there results, therefore, a severe, quick stress on the ligaments of the low part of the back at a moment when it is not safeguarded by muscle control.

In the latter instance (b), also, the load is usually excessive, and, during the muscular effort, usually while the man is making a forced or a quick exertion, he is suddenly conscious of a strain accompanied by severe local pain. The sensation usually described in both these types is of sudden painful giving way, often with a snap. The pain practically always is local in the low part of the back, occasionally referred forward to the groin, or downward in the leg along the course of the sciatic nerve.

The second type of injury occurs as a result of an external trauma, such as may be incurred by a fall or a blow, in both of which there is a considerable degree of force exerted on the spine, with sufficient violence to stretch the spine beyond its arc of motion. The results to the spine are similar to those incurred in the first type, but are naturally more severe in character, and more liable to result in actual structural damage either to the spine as fracture, or to the ligaments as actual tears. In the latter, when structural anomalies exist in the lumbosacral area, the trauma produces actual injury to this structurally less resistant portion of the spine.

The frequency of disability from a violence, not in itself severe, and incurred while the back is in a potentially weak position, is a fact to be noted, and to be considered in the estimate of the injury.

#### Condition of Spine

From the second and more important point of view, these cases are to be considered in relation to the condition of the spine existing at the time of the injury, and they may be classed as those in which violence occurs:

1. In normal spines, in which the result is a purely ligamentous or aponeurotic strain, not associated with bone injury.

2. In normal spines, in which the result is a fracture of some part of the vertebral column.

3. In spines that are already the seat of pathologic change (usually osteoarthritis) and in which the results are, therefore, ligamentous or aponeurotic strains, plus some damage to the spine, which in itself is not normal.

4. In spines the seat of structural anomaly (usually in the lumbosacral area), and in backs potentially weak, and therefore less resistant to violence.

It is often more difficult accurately to estimate the degree than the character of the injury, but attention to many points in the character of the injury and the condition of the spine are of distinct aid. Most important of all is to determine whether we are dealing with a normal spine, in which a pure strain should and can follow the usual and normal course of recovery, or with a spine that is the seat of some pathologic or structural defect or abnormality that renders it less resistant to external violence, in which case an injury will involve more than a simple sprain or even rupture of normal ligaments, and the prognosis for recovery will be less favorable.

It is found that, in a large number of these residual cases, there existed previous to the accident some abnormal condition of the spine, and it was therefore potentially not fitted to bear the strain.

To study this class of injury from this point of view, the injuries may be placed in two groups: (1) those incurred by normal spines, giving actual injury, as fracture, and (2) pure strains, involving the ligaments or merely the muscle attachment. As we are dealing principally with residual cases showing persistent disability, in which there is an anatomic or a structural basis, no consideration will be taken of strains of normal spines except to call attention to a few facts in regard to them.

The cases of old tuberculosis must be looked on as a return of an old process.

The most important feature of the sprain injuries of spines that are the seat of a pathologic process, usually osteoarthritis, lies in the fact that the symptoms arise largely from the violence to joints already diseased, rather than from the violence of the strain itself.

A normal spine with its wide range of motion may be forced quite beyond its natural range, and result only in a simple ligamentous strain, with a few or no lasting symptoms. A spine the seat of disease, osteoarthritis, for example, may allow motion within only a limited arc, yet within this arc the mobility may be free. It is essential to remember that a spine may present an extensive degree of osteoarthritis, sometimes localized to a small area, sometimes more widely distributed, and yet be without prominent symptoms, and, moreover, these conditions can even exist with the patient's being unaware of their presence. The restriction of the motion may develop so gradually that the patient gradually and unconsciously adapts himself to the limited activity, provided no acute or sensitive condition develops from trauma or other cause to give rise to acute symptoms. Motion not extensive, but forced beyond that degree which is possible under ordinary conditions, and which has become the normal one for that spine, may result in serious consequences. The ligaments themselves are often involved in the pathologic process; they may be inelastic or partly calcified, and suffer either actual tears in their structure or ruptures in their

attachments from the trauma. The forced motion of the spine may also cause injury to the joints already markedly limited by the bony changes, or the exostoses themselves may be broken off.

The same is true of the spines that present even more restriction of motion, such as the ankylosing process seen in the Strumpell-Marie type. In many of these cases, the development of the process is so gradual and with so few symptoms that the subjects are able to carry on their ordinary occupations, and are quite unconscious of the existence of the defect until the violence is incurred.

Arthritis in the sacro-iliac joint, particularly that of gonorrheal origin in which there has been loss of cartilage with irregularities of joint outline, gives a not infrequent form of potentially weak back. There may be apparent recovery from the early attack, sufficient for the patient to resume his occupation and continue until a strain occurs, and not necessarily a strain of great violence. These joints present particularly persistent disability, and perhaps more than any other type demand radical treatment by ankylosis.

### Congenital Anomalies

Among the congenital anomalies in the structurally weak backs are commonly found the following conditions: impinging spinous processes, impinging transverse processes (on the ilia); certain types of sacralized fifth lumbar vertebrae (particularly unilateral), and abnormal articular facets of the fifth lumbar and sacral vertebrae associated with (a) a defective posterior portion of the fifth lumbar vertebra; (b) an increased angle of the lumbosacral junction, and (c) an increased obliquity of the sacrum (toward the horizontal plane).

The impingement of spinous processes is an anomaly that occasionally is a source of difficulty. The impingement is either in the vertical plane, the lower surface of the upper coming into contact with the upper surface of the one below, or in the lateral plane, in which the surface of the upper process overlaps the one below, even having a facet at the point of contact of the two. The usual history of these cases is one of repeated slight strains, the patient gradually developing more lasting symptoms, and, finally, with the more severe symptoms, a more persistent disability. It ordinarily occurs in the recovery from the marked forward bent position, usually with an element of twist, and the exertion that accompanies the occurrence is not necessarily severe. The part played by the impingement of the transverse process on the ilium has not been found to be prominent in the accident cases, or in this type of industrial cases. The cases presenting the symptoms that arise from this anatomic relation usually develop their disability gradually from the often repeated irritation, and with the development of bursae, etc. The impingement of the spinous processes may constitute a very considerable disability after repeated mild injuries or strains, as well as after accidents accompanied by great force.

Structurally, there is frequently found a low set lumbar vertebra; an obliquely placed sacrum; often, small articular facets between the fifth lumbar vertebra and sacrum; a more or less flat type of articulation; and anteroposterior rather than a lateral plane of articulation, and, frequent-



ly, an asymmetrical and imperfect development of the posterior part of the fifth lumbar vertebra.

When the sacrum is more horizontal than normal and there is an increased angle of the lumbosacral junction, with imperfect articular facets, one of the conditions produced approximates a false spondylolisthesis. The upper surface of the sacral body is tilted obliquely forward, giving a less mechanically stable support to the superimposed weight, placing more dependence on the ligaments, and less on the true mechanical apposition of the bone surfaces to uphold the weight and strain of the body above, all resulting in a lessened stability of articulation.

Clinically, there is seen a sharp angle lordosis at the lumbosacral junction; an acute angle bend in the backward extension of the spine, and a very small or no lumbar convexity in forced forward bending more limited, and giving discomfort in cases that present only slight symptoms, and pain in cases that are sensitive. The unilateral leg pain is a frequent and prominent symptom; occasionally it is bilateral. Disability is out of proportion to the ordinary physical signs and to the violence of the accident, and can be explained only when evidence is demonstrated by the roentgen ray.

In the traumatic cases of stress to these spines, the usual injury from which these symptoms develop is of the nature of a sudden and unexpected strain on the ligaments controlling these articulations, placing sudden force on the back, often when the patient is under considerable exertion and in a position of physical disadvantage, as, for instance, in the position of bending forward while a distinct muscular exertion is being made in lifting a heavy weight, etc. The usual symptoms at the time are sudden pain in the lower part of the back and, often, a feeling of something giving way. There may be immediate complete disability; on the other hand, there may be but little disability, and the man may continue his work for a while; yet there is always a certain amount of low back pain which continues to increase and usually becomes excessive during the night, and is then accompanied by stiffness of the back and inability to move, etc. The clinical picture from this time on is that of the usual sprain, such as may be seen of any joint, differing only in the severity of the symptoms and the amount of disability incident to the injury of a large joint centrally placed and difficult to protect. It is hardly to be questioned that these strains are due to a giving way of some of the ligamentous structures about the articulations, such as of the sacro-iliac and lumbosacral joints, rather than to a pure musculoligamentous strain, involving a definite tearing or loosening of the fascial attachments of the big muscle of the back, although the latter may accompany the joint injury. The disability is long continued and persistent, and returns after long periods with any strain on the back. The gravity of these depends largely on whether it occurs in a normal spine or in one that is the seat of some structural abnormality or of some pathological process. The roentgen rays do not show fracture, but usually do show the anomalies referred to above which are found in this type of lumbosacral junction.

In order to differentiate the cases of true disability from those not real, in dealing with these cases of back injury showing a degree of persistent disability, it is necessary to keep in mind

the part that may be played by some pathologic or abnormal condition in the spine existing at the time of the accident. Out of a large number of back injuries that must be classed as strains, there is a definite percentage in which the immediate symptoms are far more prominent than ordinary, and the residual disability more persistent than the character and severity of the violence would suggest. This disability must be recognized as existing beyond the intensified symptoms accompanying these delayed cases, and representing an actual disability for ordinary physical labor. A very large percentage of this group is found to show structural anomalies or pathologic changes in the spine existing at the time of the accident, which render the spine less resistant to violence, even when the person had been able to pursue his occupation up to the time of the injury. Two conditions in these cases play the largest role, and must always be borne in mind; viz., the various types of osteoarthritis and the structural anomalies, either congenital or acquired. Rarely, old tuberculosis and imperfectly healed injuries, malignant disease and arthropathies are unexpectedly encountered, and must be kept in mind.

It brings into prominence the question of the suitability of many of these patients for the severe forms of work requiring hard but normal physical exertion, and the responsibility that this previous condition of potential weakness carries over to the stage of persistent disability after the injury. How long a patient would have been able to continue his work with such a pathologic condition of the spine, and without an injury to bring on a crisis, is a question, yet the injury as the determining factor in the establishment of a disability cannot be disregarded. The advisability of employing these men indiscriminately for laborious work is debatable. It would be possible by examination to cull out a large number of men who may be found to possess these defects and limitations, either of disease or of structure, and direct them to positions in the labor field which can be filled by them with safety. When it is possible to detect very many of these defects in advance, it is hardly fair for the employer to assume the risk of a more or less permanent disability, which is likely to occur in ordinary tasks because of a physical defect in the individual and not because of the risk in the occupation not hazardous in itself for the normal individual. Nor on the other hand, is it fair to the workman to place him in a position in which, because of his physical defect, the added stress incident to the ordinary exertion of his work subjects him to the danger of prolonged disability, and of his removal from the ranks of active workers. The selective placing of men in positions with reference to such physical defects or peculiarities is only following the established custom already in use in reference to many other physical defects. It in no way would displace the man from active work, but, on the other hand, would select the individual for the place, and, in so doing, add to his chance for remaining a more permanent asset in the labor world.

In regard to the treatment of this group of persistently disabled persons who are found to have definite defects, the demand is for definite and radical measures. The treatment in detail of these cases is not considered in this paper, since its object is to call attention to the important role that these recognizable physical defects and anomalies play in causing long persistent or

prominent disability under the stress incident to normal labor, and to the necessity of taking steps to safeguard against these occurrences.

The ordinary apparatus applied for support and protection and the measures of physiotherapy give only temporary relief to these patients. A spine once the seat of injury because of defect can hardly be expected to endure the repeated stress with impunity. The only definite way of remedying a loose or defective articulation of this kind is to fix it firmly by a bony union.

—LeRoy D. Long, M.D.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Silent Lesions of the Upper Urinary Tract, Wm. E. Lower, Cleveland, Ohio. Cleveland Clinic Quarterly.**

In a series of 637 cases of kidney lesions it was found that 33.1% had no symptomatology referable to the kidney, 15.3% of the symptoms were referable entirely to the bladder, 9.5% to the gastro-intestinal tract or back, hips, chest, etc., and in 8.3% the lesion was entirely symptomless. In tuberculosis of the kidney symptoms were referable to the kidney in only 27.5% of the cases and 72.5% had no symptoms referable to the kidney. Tumors of the kidney showed 50% with symptoms not referable to the kidney, and attention was directed to the kidneys because of the presence of blood in the urine, or in children because of abdominal tumor. Many cases presented symptoms referable to the gastro-intestinal tract which accounts for the large number of mistaken diagnoses and often unnecessary abdominal operations. Hydronephrosis in this series presented 38.4% with no symptoms referable to the kidney.

Pyelonephrosis showed 62.4% with kidney symptoms, 16.6% of this group were symptomless, and 37.5% showed symptoms referable to the bladder only. In perinephritis abscess 60% presented symptoms referable to the kidney, the remaining presenting no symptoms referable to the kidney or being symptom free. In cases of hematuria only 71.3% presented symptoms referable to the urinary tract. Hematuria may be symptom free until, if the lesion is in the kidney, a clot forms and blocks the ureter, presenting typical pictures of renal colic. To await this event means to let the lesion progress too far in many cases for satisfactory treatment.

This is an excellent article and should be read by every man who caters to general medicine.

**Eneuresis. Its Urologic Aspect. Meredith F. Campbell, New York City. Journal of Urology, September, 1932.**

This is a very good article and should be read by every physician who attempts to treat children.

The author begins by a definition of eneuresis as unintentional or involuntary nocturnal or diurnal urination in the absence of demonstrable pathology. In a series of 249 children, four years of age and over, in whom clinicians had diagnosed eneuresis and medical, physio, and psychotherapy had failed, complete urologic examinations were carried out. In 60% of these cases a definite or-

ganic basis for the urinary symptoms was found. The author considers eneuresis only as a symptom, and disagrees with those who claim to commonly diagnose it as purely functional, psychic or emotional. Normal bladder control should be established by the second year of life, but for various reasons he has taken children only over four years of age. 118 were males, 131 females. Listed among the causes of eneuresis, are, rectal worms, enlarged tonsils, adenoids, hyper acid urine, phimosis, neuropathic instability, constitutional inferiority, exhibitionism, retaliation, fear of the dark, profound sleep, faulty diet, spina bifida, congenital weakness of the sphincter, undue tonus of the vesical detrusor, masturbation, and nocturnal pollution. One psychiatrist believes it represents a desire to be a fireman, Hamill stated eneuresis is entirely a volitional condition. The author states that antecedent disease is rare-ly of etiologic importance.

The forms of treatment are legion for this condition, over 30 drugs have been advised for bed wetting, atropin being the one most often recommended, acetocholine has recently been recommended. The empirical withdrawal of water after 4:00 P. M., the omission of a heavy evening meal, and the awakening of the child by parents or alarm clock are employed. Some have sealed the meatus with collodion, some raised the foot of the bed, others tried psychic suggestions. Circumcision, tonsillectomy, adenoidectomy, rectal massage of the bladder floor, passage of sounds, faradic stimulation of the perineum, caudal injections of normal saline, remonstrance, cajoling, whipping these children only makes the gap between parent and child wider. Encouragement and co-operation are valuable when it is functional. Many pediatricians pay no attention to eneuresis, stating they will spontaneously recover. Some of these patients will cease to wet the bed due to the acquiring of more cerebral control, on the other hand the author states that urologists see many in the second and third decades of their lives manifesting the latter uropathic picture consequent to congenital or early acquired bladder outlet obstruction with residual urine. Some are due to tissue abnormality, some are neurogenic. The symptoms of eneuresis may disappear, but the underlying pathology remains, and for this reason the author maintains that enuritic children over four years of age should be subjected to urologic examination when extensive medical, physio and psychotherapy for two or three months has proved unsuccessful.

Urinalysis of catheterized specimens in females and voided specimens in males (collected after retraction of the prepuce) carefully washing of the glands and meatus with soap, and voiding a few c.c. prior to taking of specimen is of great importance.

In this urinalysis we are interested in pus, blood and bacteria. Carefully note the residual urine. He found 16% with residuum of 10 c.c. to 10 ounces. In juveniles residual urine is most commonly caused by congenital obstruction of the bladder neck or urethra and neuromuscular disease (cord bladder). Cystometry is the next procedure. This determines the myogenic and neurogenic balance of the bladder. A plain radiograph of the G. U. tract is taken, here may be seen stones, spinal defects. In his 237 cases 34 showed spina-bifida occulta and two sacral deformity. A cystogram is next made, the child is next subjected to cystoscopy. In 85% of these cases the examination was performed without general



anaesthesia. The findings include practically every known lesion of the urinary tract. There were only 76 normals. Of strictures, congenital atresia of the meatus is most common. He has never observed enuresis due to phimosis, but he has seen enuresis following circumcision. In females urethro-trigonitis is very common. It responds to urethral dilations and local applications of silver nitrate. In males the posterior urethra showed changes seen in the adult with chronic and excessive masturbation. Prostatitis often occurred before puberty.

With a negative urologic examination further treatment can be carried on with the assurance that no marked destructive uropathy is in progress.

**Tuberculosis.** Alfonso De La Pena and Emilio De La Pena, Madrid, Spain. *Journal of Urology*, September, 1932. Page 343.

The author quotes Keyes as having found autonephrectomy to have occurred in 1.2% of cases, and Caulk in 10% of cases. He states that the risk of nephrectomy seems to be less, the post-operative course more favorable in cases who have undergone autonephrectomy before nephrectomy. Closing of the ureteral lumen undoubtedly slowly abolishes the remaining function of the kidney. The healthy kidney having time to undergo compensatory hyperplasia. Nephrectomy is a safer procedure after the body has become accustomed to all of the urinary excretion being carried on by one kidney.

He reports four cases in which he electrocoagulated the ureteral meatus, which in turn closed the vesical orifice of the ureter, and later performed a nephrectomy. He warns especially in the early cases of development of hydronephrosis or pyonephrosis and immediate operation possibly being imperative. In one case he inserted catheter in ureter to prevent its too rapid closure,

and after taking catheter out in five days the patient complained of pain in the kidney region. Cystoscopic examination three weeks later revealed no dye coming from the coagulated orifice. On nephrectomy of this kidney the blood supply was good, there was marked dilation of the pelvis and calices, and tubercle bacilli were received from the urine of this kidney.

He states in conclusion that a safer way is to insert a catheter in ureter after the coagulation of the vesical orifice for a few days to prevent too sudden closure of orifice. He states that by occluding these ureters that the other kidney is adapted before nephrectomy to the whole body's excretory function of both kidneys, and the lower urinary tract is less liable to infection.

## BOOK REVIEWS

**Pharmacology of the Medicinal Agents in Common Use.** A brief account of their derivation, their more important uses, their chief physiological effects, with incidental mention of their therapeutic uses. By Stanley Coulter, Ph. D., Sc.D. Prepared especially for students of medicine. Published by Eli Lilly and Company, Indianapolis. Price Fifty cents.

**Hospitals and Child Health. Hospitals and Dispensaries; Convalescent Care; Medical Social Service.** Reports of the Subcommittees on: Hospitals and Dispensaries—Clifford G. Grulee, M.D., Chairman; Convalescent Care—Adrian V. S. Lambert, M. D., Chairman; Medical Social Service—Ida M. Cannon, R.N., Chairman; White House Conference on Child Health and Protection. The Century Company, New York. Price \$2.50.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE.

Examination held at State Capitol, Oklahoma City, September 12th and 13th, 1932. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Atkins, William Howard	1907	Lone Mt., Texas	Univ. of Tenn.	1930	Norman, Okla.
Beaman, Marion Thos.	1861	Indiana	Under-grad.		Midwell, Okla.
Cisco, John Smith	1879	Kentucky	Ky. School of Med.	1907	Ardmore, Okla.
Daly, John Fidler	1905	Overton, Neb.	Univ. of Penn.	1930	Lawhuska, Okla.
Edwards, David Lloyd	1907	Ponca City, Okla.	Northwestern	1932	Tulsa, Okla.
Fulton, Clifford Cannon	1902	Atoka, Okla.	Rush Med.	1929	Atoka, Okla.
Graham, Allison Tower	1891	Mississippi	Memphis Hosp. Med. Col.	1913	Okla. City
Hamilton, F. L. A.	1862	Mt. View, Ark.	Missouri Med.	1888	Kemp, Okla.
Hinson, Bruce Ratliff	1906	Bono, Ark.	Northwestern	1932	Enid, Okla.
Holz, Carl Julius Henry	1902	Marissa, Ill.	Univ. of Ill.	1928	Tulsa, Okla.
Johnson, Glenn Herbert	1893	Harrison, Ark.	Univ. of Ark.	1929	Tulsa, Okla.
McGonigle, John I.	1866	Adair, Mo.	Beaumont Hosp. Med.	1901	Okla. City
Pitts, Donald H.	1893	Little Souix, Iowa	Creighton Med.	1917	Canute, Okla.
Ratcliff, Leo R. (Col).	1897	San Augustin, Texas	Meharry Med.	1928	Tulsa, Okla.
Staley, Percy Alfred	1900	Aurora, Mo.	Univ. of Ill.	1930	Fairfax, Okla.
Woodburn, Joel Tinder	1902	Parsons, Kans.	Washington Univ.	1928	Muskogee, Okla.
Reichert, Rudolph Joe	1899	Evansville, Ind.	Univ. of Iowa	1930	Okla. City
Eberhart, Majorie Graham	1904	Arkansas	Univ. of Okla.	1930	Manhattan, Kans.
Rafferty, Frank Wilbur	1908	Spokane, Wash.	Univ. of Oreg.	1932	Okla. City
Mechling, Geo. Seanor	1905	Newkirk, Okla.	Univ. of Okla.	1932	Okla. City
Lyons, Dave Joseph	1905	Kansas	St. Louis Univ.	1930	Seminole, Okla.
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## SOCIAL INSURANCE UNDERMINES NATIONAL CHARACTER (Continued)

By DR. EDWARD H. OCHSNER

Someone has said, "Happy is the nation that has no history." Whoever said this probably had in mind the old type school history text books which contained little besides records of military campaigns, revolutions and international wars. Viewed from that standpoint the epigram was unquestionably true. Today a more suitable epigram would be—Happy is the nation that has no need for charitable organizations or devices. The ideal society would be one in which every individual can and does secure a decent living for himself and those dependent upon him by the "sweat of his brow," or by mental exertion, or, what would be better still, by the application of both brain and brawn.

There is no fundamental difference between outright charity and social insurance; both undermine character; both have a tendency to pauperize the citizen, for both rob the individual and his self-reliance and his enthusiasm and his urge for industry; they both penalize the honest, frugal and industrious and favor the lazy shifters and immoral because they inevitably favor the unfair and inequable distribution of the results of labor; both encourage malingering and favor neuroses; both often give something for nothing or much for little, which is the basis of parasitism, and both delay the ultimate goal when every man shall reap the fruits of his labors.

The man who once accepts charity, particularly if it is not a case of dire necessity, is not quite so fine a man as he was before. He has lost something that nothing can replace. War, pestilence, or general disaster may reduce anyone of us to want and penury and then there is no disgrace in accepting aid from our fellowmen; but under ordinary circumstances no able bodied individual with fair intelligence and health has any moral right to that which he has not honestly earned.

The proponents of Compulsory Health Insurance will undoubtedly say that it was with the view of saving men and women from the stigma of being paupers and the evil effects of pauperism that this and other phases of social insurance were brought forward. Exactly, but what has actually happened they did not foresee. As is so generally the consequence when a law is enacted on an emotional basis instead of on sound reasoning and adequate experience, an element was introduced even worse than pauperism; besides, pauperism was not relieved nor even mitigated.

There are two distinct types of paupers. The mentally and morally subnormal who are not in any way injured by the stigma of pauperism and who still remain paupers because no Compulsory

Health Insurance law so far devised includes or can include them. They are the "unemployable" whom industry cannot use. The second class are old people who in their youth have been lazy or extravagant, or who have lost their savings through poor investments. Those who have been lazy and extravagant are simply reaping their just reward and have no one to blame but themselves and it is morally wrong for the government to tax the thrifty and industrious for their support except in almshouses. The way to deal with the problem of the investment sharks is to teach the pupils in our high schools something about investment and to hang the gold brick and non-secure security salesman, or if this is too drastic devise some other way of putting them out of business.

Compulsory Health Insurance has simply added parasitism to pauperism. The effect upon the insured and upon the public in general is almost as bad as it is on the medical profession. It encourages malingering and deception; it puts a premium on sloth and shiftlessness and a penalty on industry and integrity and thrift; it robs industry of its just reward; and it encourages parasitism.

One of the first effects observed after its introduction in Germany was the changed attitude of a large group of the insured. Before the law went into effect, patients came to their physicians for the relief of real ailments; after it went into effect an ever-increasing number came with imaginary and simulated ailments for the purpose of getting the sick benefit stipend or free hospital care. The latter was particularly the case in the fall of the year when many came complaining of things that were difficult to diagnose and hence difficult to exclude such as spinal concussion, neuritis, and vague abdominal pains. As time has passed this abuse has gradually grown to appalling proportions as the following statistics indicate. Dr. Potts of Oak Park, cites the following:

In a check-up in Brawnschweig, two thousand eight (2008) people on the sick list were asked to report for a check-up examination. This induced eight hundred sixteen (816) to report for work at once, two hundred eighty-nine (289) were found fit for work and only nine hundred three (903) or less than forty-five (45) percent of those receiving sick money were actually sick. The proponents of Compulsory Health Insurance will undoubtedly say—this is an individual instance. But not so. This abuse is so almost universal that it is seriously affecting the general honesty of the rank and file of the citizens of those countries where it has been in operation the longest. Social insurance is one of the major factors which has brought Germany to the very verge of economic ruin, and worse than even that—it is undermining the fundamental honesty and moral integrity of the German citizen.



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## ACUTE PERFORATING ULCERS OF THE STOMACH AND DUODENUM

ROY FISHER, B.S., M.D.  
Frederick Clinic Hospital  
FREDERICK

The earliest account of a perforating gastric ulcer was presented to the Royal Society by Rawlinson in 1729, and the earliest description of a perforated duodenal ulcer was written by Penada in 1793.

The immediate cause of perforation is not positively known and, according to Moyinhan, not easy to discover. The solution undoubtedly lies in the discovery of the etiology of the ulcer itself. It seems logical to suppose that in the majority the tissues at the site of the ulcer becomes so weakened that they are unable to continue their normal physiological function and, as a result, perforation takes place. The frequency of perforation after a large heavy meal or an alcoholic spree might be suggested as an example for this theory.

### AGE AND SEX

In reviewing over a thousand cases reported by several authors it was found that about 80% of the patients suffering from perforation were between the ages of twenty and fifty. Cases occurring later were found to be associated with carcinoma quite frequently. Harrison reports a case occurring in a ten-day infant, and Anderson reports three cases of perforation in older children. Perforation, of course, is much more common in men. The men affected are mostly of the artisan class, employed indoors and careless about their food, habits, general mode of living and especially prone to worry. In the case reports reviewed only one case in each twenty-one occurred in a woman although the frequency of peptic ulcer in women is about 13%. The relatively low incidence of perforation in the female can be explained only by less intense physical activity and more regular habits of daily life.

### LOCATION OF PERFORATIONS

Duodenal perforation is approximately four times as frequent as gastric perforation and to find more than one perforating ulcer is most unusual, although in the so-called ulcer bearing area other ulcers are occasionally found, this being a principal reason for partial gastrectomy given by some surgeons who advocate this type of operation for perforation.

### CLINICAL HISTORIES

In the diagnosis, care must be taken not to attribute too much importance to a negative history of previous ulcer symptoms. It is evident that silent ulcers may occur, as intelligent patients sometimes strongly deny previous gastric distress. This is of course the exception rather than the rule. Generally there is a previous history of indigestion varying in duration from a few days to a period of years. A large number of cases exhibit what White and Patterson have termed the "preperforation exacerbation." This condition is identified by severe ulcer pain, constant in character and no longer relieved by food or alkalis. It represents serosal involvement by the pathological process and may last from a few hours to a few weeks. Most of the cases are so acutely ill at the time of admission to the hospital that a past history is not very thoroughly gone into, but usually where this is possible definite antecedent symptoms are found to have been present in the majority of cases.

### SIGNS AND SYMPTOMS

The onset of the symptoms is almost invariably sudden, the exception being the cases that exhibit the so-called, "preperforation exacerbation," period that may last hours or weeks. The initial pain is usually epigastric and is described by some as knife-like and by others as a severe cramping, but regardless of the description it is severe and agonizing. Morphine

has little or almost no effect in relieving the pain, which can only be likened in its acuteness and severity, to the similar one of acute pancreatitis.

Judine believes the radiations of the pain are important in revealing the site of the perforation. He states that pain radiating to the right shoulder is usually associated with duodenal ulcer and pain radiating to the left shoulder is usually associated with gastric ulcer.

Following the sudden onset of pain, the pulse rate remains unchanged or is slightly lower, the temperature remains normal or unchanged if slightly subnormal, while the respiration becomes shallow, of the thoracic type and increased in frequency. The patient assumes a position on the bed with legs flexed and voices much objection to being moved. The abdomen takes on a scaphoid appearance and becomes board-like. This board-like rigidity may be general or just confined to the epigastric region and it is accompanied by extreme tenderness to palpation. These two important findings are seen early.

Vomiting occurs in less than half of the cases and this rarity is a valuable sign as nearly every other acute abdominal condition is commonly associated with this symptom.

Leukocytosis is the rule and makes its appearance early, the average count being about 15,000.

Pneumoperitoneum is a conclusive diagnostic sign demonstrated best by the use of fluoroscopy. Free gas has been seen as early as two hours following perforation. Great emphasis has always been placed on the profound type of shock occurring in these cases, but after reviewing the reports of over a thousand cases the author found that real profound shock was rare and that the lesser degrees of shock noted usually disappeared rather quickly.

Massive hemorrhage is rare in perforation. It is of interest to note that the ulcers that bleed are not apt to perforate.

A sufficient number of the symptoms and signs of perforated ulcer are usually present to permit a prompt diagnosis but there are occasions when the differential diagnosis of ruptured peptic ulcer presents difficulties. The conditions most frequently encountered, or which must be considered, are acute perforated appendicitis, acute pancreatitis, acute cholecystitis, diaphragmatic pleurisy, intestinal obstruc-

tion, coronary thrombosis, mesenteric thrombosis, tabetic crises and renal colic.

As the condition progresses, a reaction sets in, during which time the patient may think and say that he feels improved. This stage is called the "transitional stage," or the passing on to true peritonitis with its accompanying symptoms. The diagnosis at this late stage is always difficult. Another important finding appearing at this time that is worth remembering is revealed by rectal examination. In a great majority of these late cases there is a marked peritoneal tenderness in the region of the recto-vesical pouch due to the accumulation of irritating fluid gravitated into the pelvis by way of the right lumbar gutter.

#### TREATMENT

All agree that the only treatment for an acute perforation is operative, and that operation should follow promptly on the diagnosis. It is surprising to note how much opinion differs as to the best surgical procedure in these cases. In reviewing articles published in the foreign journals radical operation seems to be in favor, but simple closure is the more common procedure in this country.

In my opinion, the treatment of perforated peptic ulcer is a most ideal place in which to apply the Golden Rule. "Never submit your patient to a risk you would not choose to incur for yourself." Personally I believe the indication for operation is *vital* but not *radical* and that the procedure should occupy as little time as possible, together with a minimum of operative trauma. It is my belief that simple closure alone should be performed in these cases, and a gastroenterostomy performed later if necessary. There are exceptions, of course. In some cases gastroenterostomy is indicated at the time of operation because of evident obstruction due to the size and location of the ulcer, the swelling and induration of the tissue surrounding it and the large amount of tissue infolded in the suture to insure proper closure of the perforation. Partial gastrectomy likewise will be indicated in some cases due to the size and location of the ulcer or to the fact that multiple ulcers may be present in the so-called ulcer bearing area.

Simple closure of the perforation is the procedure of choice because:

1. It is the quickest, simplest procedure to meet a grave emergency.



2. The operative mortality is lower than with any other type of operation.

3. The post-operative course is smoother.

4. The ulcer, in the majority of cases heals promptly and remains healed.

5. Subsequent pyloric obstruction is infrequent, and when it does occur the indication is ideal for a secondary gastroenterostomy under the most favorable conditions.

Drainage of the abdominal cavity is a matter of choice, judgment and experience. When indicated the supra-pubic drain, draining the recto-vesical pouch through a separate stab wound, in my opinion, is best.

#### POST-OPERATIVE TREATMENT

The post-operative treatment consists mainly in placing the patient in the Fowler position, giving him fluids, in some manner other than orally for the first thirty-six hours. Following this, small amounts of water are given by mouth, increasing in amount daily, after which other fluids and proper foods are given in increasing proportions. Needless to say these patients should be placed on a well regulated diet and kept under strict observation for a year or more following their discharge from the hospital.

#### PROGNOSIS AND MORTALITY

The prognosis and mortality depend mainly upon early diagnosis and early surgical treatment. The most common causes of death in the cases in which exitus ensues are:

1. The combined shock of the perforation plus the surgical procedure.
2. Peritonitis and paralytic ileus.
3. Pulmonary complications.

Earlier diagnosis plus simplified surgical procedure and the use of spinal anesthesia should materially reduce the percentage of fatalities.

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DISCUSSION: *Dr. Frank McGregor, Mangum.*

*Mr. Chairman and Gentlemen:*

I think from a surgical standpoint this is one of the most practical papers I have ever listened to, and the only thing I would do would be to emphasize some of the points which Dr. Fisher discussed. In reference to symptoms, there is absence of vomiting, in my experience. Early diagnosis in these cases is usually in the hands of the family physician, who sees these patients first. Often when they find a board-like abdomen, excruciating pain, temperature subnormal, and pulse subnormal, they just can't believe the patient has a perforation. The reason for the considerable mortality following perforation is the lapse of time that often occurs between the onset and the time of operation. Another thing I would like to pay very much attention to, statistics that surprised me, is the frequency of gastric and of duodenal ulcers. Duodenal ulcer occurs four times as frequent as gastric ulcer. In my experience I have seen seven or eight perforated peptic ulcers to one perforated duodenal ulcer; I do not know whether the location has anything to do with that or not. In my mind. I can see at least seven or eight gastric ulcers to one duodenal, most of them either pyloric or pre-pyloric. I would like to hear from some of you other surgeons in regard to your experience with the frequency of these. I think at operation the defect should be simply sutured and come on out of the abdomen, and not subject these patients to operation unnecessarily. The operation is primarily a life-saving operation, and you do a gastroenterostomy or partial gastrectomy later if necessary. Regarding the post-operative treatment, treat them like any other ulcer case after you have operated. They usually get along very well. The cause of death in these cases is usually peritonitis. I have never seen one die from shock except where extensive operative procedure was done. They usually die from peritonitis later. I want to mention again the three or four cardinal symptoms in these

cases; the board-like abdomen, slow pulse, subnormal temperature, excruciating pain, and lack of vomiting; these are the outstanding symptoms. The sooner doctors get these in their minds and the sooner early diagnosis is made, the more patients will live. I once had an idea that every perforation was accompanied by profound shock.

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*Dr. A. L. Blesh, Oklahoma City.*

A perforating duodenal or gastric ulcer demands immediate action on the part of the surgeon, and demands that in such a manner as to save the patient's life, and not to cure existing pathology. I think that was well brought out. Suture of the perforation with a reinforcing pad of fat is frequently desirable with edematous tissue which will not hold sutures. We cannot depend alone on suture, often the sutures would not hold, but the re-inforcing pad over the top will make it doubly secure. As has been said before, the object of the operation is to save a life and not to carry out extensive surgery. The time element is of the greatest importance, both from the operative standpoint and from the standpoint of diagnosis, because as the essay pointed out, the later the diagnosis the greater the mortality rate. The diagnosis is not made as early as it should be in many instances; often it is not made for eight to twenty hours, and these patients should be operated within the first few hours if we are going to get the best results. The mortality statistics are not to be taken into account at the time of operation; we are operating merely in an effort to save a patient's life in the direst emergency. The shortest operation in the shortest time at the earliest moment is proper. The diagnosis is not difficult. If one has seen and recognized one of these cases, from that time on the average man will be able to read the characteristic symptoms and make his diagnosis.

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*Dr. Leroy Long, Sr., Oklahoma City.*

Sudden agonizing pain that does not abate, a board-like abdomen, shallow respiration, anxious countenance—these are the classical symptoms in all perforations of a hollow viscus in the abdomen. The cases I have seen have not gone into shock. The pulse has usually been good. I agree entirely with the statement that only suture should be done at the time of operation. Many cases are acute perforating ulcers, and with simple closure and with

simple care exercised afterwards, the patient will recover entirely from his pathology. Most of the cases I have seen have been in the duodenum, occasionally one is seen in the stomach. Going back to the use of simple closure, I happen to know the medical director of the Equitable Life Insurance Co., and was permitted to go over the figures in his office with reference to the course after simple closure and the course after an enterostomy. He says there is no question at all but that those who have simple closure have a much more favorable course than those who have other operative procedure. We must make a distinction between the acute perforating ulcer and the perforating chronic ulcers that take place slowly, eventually giving the symptoms of perigastric abscess, etc. We have seen some of those cases who have had perforations some time before, and the doctor wakes up to find the formation of an abscess. We have seen a few very small perforations which for a few days were protected by omentum. We can't depend on that. Every case should be looked on as an emergency. Some time ago I reoperated a patient who had had a perforation of an ulcer about a week before. The surgeon in that case had done an enterostomy. He had advised immediate operation, the patient had the operation and had done perfectly well, but there was just one error made in the operation, and that was that closure had been made with purse string suture. The margins of the ulcer were somewhat indurated and did not invert well, and after three or four days gastric juice was coming from the drainage tube. The situation had been saved for the time being; the surgeon had undoubtedly saved a life, but afterwards there was leakage. In that case it was due to the use of purse string suture, which did not invert the tissue very well. In my judgment, it is better to take through and through interrupted sutures, reinforcing them by omentum.

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*Dr. S. N. Mayberry, Enid.*

I think that you could make a diagnosis of perforating ulcer over the telephone. The pain is always sudden and severe, the abdomen is hard, there is no temperature, bounding pulse, and no vomiting. These symptoms are enough. You can solicit them over the telephone and will be justified in hurrying your patient to a hospital. If I can get the patient in the first hour or two and find the ulcer—small peptic



ulcer, I am speaking of—I do not like to close it up and leave an enemy in the rear. In the last four operations I have done—I have had in the last few months four cases of perforating ulcer—in each of them I have taken the ulcer out, going well back into the good tissue. There was perforation without much of an ulcer, and I have just taken them out completely. These cases have all done just as well as if I had done only the temporary operation with drainage. A good deal depends on drainage. One of the complications we ought to look for is subphrenic abscess. In these four cases, one of them developed a subphrenic abscess, and I believe it was due to lack of proper placement of the tube. I had to resect the tenth rib and drain the abscess. Really, I am in favor of enucleation of small ulcers. It seems that most of you are in favor of temporary drainage but I don't like the idea of having to do that. There are a great many cases where you would not be justified in enucleating the ulcer, but I like to see it done once in a while.

*Dr. Fisher:*

Gentlemen, in closing I just want to say that I agree with Dr. McGregor. When I was asked to read this paper, my personal experience was so limited that I quoted the reports of cases from men who were doing a large amount of work, and I had access to a large number of hospital records, but in my experience, the last four cases that I have done have all been gastric ulcers. In speaking of the technique I just mentioned simple closure. I want to agree with Dr. Blesh and Dr. Long that of course the thing to do is to reenforce the closure with a pad of fat. I believe this procedure is the best. Dr. Blesh remarked that we had some of the poorest and some of the best surgery here in America, and I think that is true. Sometimes the temptation to do a beautiful operation is great, but it is better judgment to do the simplest operation and get out as quickly as possible. In regard to drainage, usually these perforations occur on a full stomach and you find a large amount of stomach contents in the abdomen. The tendency is to do a great deal of mopping and swabbing and use suction, but I think the less we do of that the better. If you mop around promiscuously you are going to get a lot of adhesions. If you put in a suprapubic drain they usually get along nicely.

## THE GALL BLADDER

WALTER E. SISTRUNK, M.D.  
DALLAS, TEXAS

*Mr. Chairman and Gentlemen:*

It is a pleasure to me to have this opportunity to deliver this address before your state society. When Dr. Watson asked me to talk on the gall bladder, I wrote to him and asked him what aspect of it I should take up, and in his reply he told me that any particular I wished to talk on would be all right. Finally he put me down on the program under the heading of "The Gall Bladder," but my paper was written with the feeling that a paper on the management of patients with gall bladder disease would probably be more interesting than taking up some other phase of the gall bladder.

We must remember that we see different stages of gall bladder disease, and we can very quickly divide them into patients suffering with mild diseases of the gall bladder and patients suffering with moderately severe disease of the gall bladder, and those who have severe trouble with the gall bladder itself, and one of the subsequent complications have arisen and changed the picture, and in that way have made a condition which is very much more severe to deal with. The diagnosis of those conditions is so well understood that I do not feel that it would be worthwhile spending much time in trying to go into that particular of gall bladder surgery. I have only to state that a very carefully taken history is a very searching thing to me as far as making a diagnosis of gall bladder disease is concerned. The X-ray, when it is positive, is of considerable value, and many times when dealing with patients who have an indefinite history we are able to rather quickly clear it up after oral or intravenous—as we are now finding best in some cases—administration of dye. As far as my experience with the X-ray is concerned, I have felt that a diagnosis made upon a gall bladder which seemed enlarged or emptied slowly after the fat meal was not enough evidence to make a gall bladder diagnosis positive, and have been disappointed at times in finding very little pathology in the gall bladder. On the other hand, if through X-ray we find that stones are present, that is a different thing. If we find either by oral or intravenous dye that the gall bladder does not fill at all,

that is of tremendous importance to me from a diagnostic standpoint. Ordinarily we use the oral dye because it is simpler and easier to take, but if we find it fails to fill the gall bladder, then I use the intravenous administration of dye. Such methods as drainage by the duodenal tube is confirmatory evidence, but in my opinion, not always positive. Gastric analysis is an indefinite means but sometimes throws light on some obscure point. The history is the main point, and if we can get a good history of gall bladder disease and find anything from our X-ray or laboratory, or from the gastric analysis, it is worthwhile and a help to us.

Now I think in dealing with gall bladder conditions that it is an excellent thing for one to consider the pathological conditions which develop following the infection in the gall bladder. These complications are many, and many times are very serious. I do not doubt that we see many people who have mild gall bladder disease who under very simple treatment, such as dietary changes, will have the condition disappear and probably go along through life without much trouble. On the other hand, when the gall bladder becomes diseased, bacteria accumulate and there is precipitation of bile salts and stones are developed, and when these develop, although the patient may get by for a while, they are likely to have serious complications develop and these complications ought to be borne in mind always when we are consulted in regard to what should be done for given cases. One of the complications which we see and which I look on seriously, liver changes come in practically all people who have definite gall bladder disease. In the milder cases a hepatitis develops which varies in degree from a very mild evidence of trouble around the gall bladder arising on up to the point where the liver throughout its entirety shows considerable change. If this is allowed to go along over a long period of time, this continued hepatitis produces a very definite sclerotic change in the liver, and we find at operation a liver which loses its lower margin so far as edge is concerned into a thick, rounded edge, and in such cases damage to the liver has been very marked. Fortunately, however, if we can get rid of these before so far a stage is reached it may come back to normal and the patient may go on through life without serious trouble. Another complication is empyema of the gall bladder. That usually comes through efforts of the

gall bladder to expel stones through the cystic duct. With small stones or precipitates this condition is likely to happen. If the stones have grown large they do not as a rule become impacted in the cystic duct but in time they may get down in the pelvis of the gall bladder and cause blocking. In blocking a stasis is brought about in the gall bladder and the gall bladder becomes very much thickened, and we often find pus in the gall bladder, and under such conditions we sometimes find extension progressing to the liver and an abscess may develop in the region of the gall bladder itself. Those conditions are serious. Gangrene of the gall bladder, which as a rule is brought about in the same way, by impaction of some small stones in the duct, and in some cases impaction in the cystic duct. In this condition edema develops and produces enough pressure to cut off the cystic duct to the liver and gangrene results. There may be thrombosis in the cystic arteries and gangrene develops. Under such conditions we are likely to have perforation of the gall bladder and to have serious complications such as subdiaphragmatic abscess or abscess of the liver. Of most seriousness is the fact that when stones are small they sometimes pass through the cystic duct and get into the common duct. They may remain there for years, but gradually they precipitate bile and slip down and block the common duct. That brings about a serious complication if allowed to go for a period of two or three weeks, and operations performed for the removal of such stones are performed with very great danger. In my own experience with people who suffer from common duct stones, when the attack first comes on and jaundice appears, if we are able to get a pretty good history of previous gall bladder trouble, I allow them to wait for a period of seven to ten days because they apparently develop considerable immunity through the infection which is present and the blood clotting time, etc., is such that there is no danger particularly in operating. Not much damage occurs to the liver in this time, and the operation can then be comparatively safely performed. If operation is done then it can be done without particular risk to the patient, the stones removed, and drainage instituted, a tube being placed in the common duct. If the condition is allowed to persist we find after a while that the pressure in the bile duct becomes so great that it is transmitted back to all the hepatic ducts and we find lack of ability



on the part of the liver cells to perform their function. Bile is no longer secreted to the liver and the bile present in the gall bladder becomes absorbed and we have nothing but mucous left and a patient of that sort is a poor risk. Release of the pressure which was present in the duct may allow, in a day or two, bile to flow from the liver, but it is not the clear, yellow, normal bile, and many times in these operations, which may be looked on as decompression operation, renal complications occur. Another very common complication is pancreatitis, which we all know is an acute hemorrhagic condition which carries with it a very high mortality, and which is a condition we have very little means of dealing with. I think as a rule if operation is done, unless the peritoneal cavity is drained it is very dangerous, but still it is associated with high risk. We see also a subacute pancreatitis. In this there is a great deal of malaise and a very mild jaundice, perhaps due to edema which developed through the pancreas, and many times we see in addition to this an acute cholecystitis and succeeding acute appendicitis in the same patient. These are difficult to deal with. As a rule if the patient is not too sick we can often make an anastomosis between the gall bladder and duodenum with the idea of going in later after the condition subsides and remove the gall bladder or drain the gall bladder, because we feel that there is some infection in the gall bladder and in order to cure the pancreatitis it would be much better if we could remove the infection in the gall bladder and in order to cure the pancreatitis it would be much better if we could remove the infection of the gall bladder itself. We also have the chronic form of pancreatitis where at operation we find a hard pancreas, which many times is slightly enlarged but as a rule can be differentiated from malignancy, which usually comes in the head of the pancreas and produces jaundice. We usually find in pancreatitis an external involvement of the gland in its entirety. These patients many times have digestive disturbances which are very difficult to deal with and which add to the patient's inconvenience throughout his entire life. Another condition which any surgeon encounters once or twice a year is carcinoma, which occurs in patients who have gall stones over a long period of time, and which many times are inoperable and have involved the liver over a considerable surface before they are recognized. Many of these cases will

have a long history of gall bladder attacks simulating stones, with indigestion, etc., which they have had over a long period of time, and suddenly they began to lose weight, and at operation a malignancy is found. This condition is present often enough to consider it one of the serious complications which may come following long continued gall bladder disease. Another condition which we see is the fact that in certain cases where you have definite gall bladder disease, diabetes appears. We see also changes in the gastric juice following long continued gall bladder disease. I think in the milder cases we often see no change at all and the patient may go along for years without any trouble; then again there may be hyperacidity and he may have to take hydrochloric acid throughout his life. Again, in gall bladder diseases it has been pretty definitely shown that we sometimes see gastric hemorrhages. These are looked on as being toxic in origin; whether bacteria produce involvement of the sympathetic system we do not know, but sometimes we have hemorrhages from the stomach with negative X-ray and negative laboratory findings so far as gastric pathology is concerned, and after removal of a diseased gall bladder or a diseased appendix this will clear up. The splenic diseases which occur in this connection are splenic anemia and Banti's disease. We will often times find a very definite disease in the gall bladder, which in many instances has to be taken out before the patient will cease to have hemorrhages from the stomach. I have seen several cases in the past years.

So far as the management of cases is concerned, I never advise patients who have mild cases in which the diagnosis is indefinite and the laboratory findings of no particular value to us to have anything done as far as surgery is concerned. I usually feel that if they will carefully watch their diet and avoid acid foods and fatty or greasy foods, high caloric foods, and in many instances sugar, or anything that brings on liver attacks or which produces gas and bloating or anything that is looked upon as being stomach trouble, I usually prefer to treat them in that way until they begin to have evidence making making me feel that more pathology has occurred than we are able to determine in the mild case. I think we have to bear in mind that the mild cases are often disappointing when they are operated. The pathologists often report some mucous or

leucocytic infiltration or something of that sort, but we do not feel in many cases that the patient is going to be benefited by the operation. If they are not having much trouble I think it is better to wait these cases out until something more definite appears. In many cases if they will just stop eating altogether for a day or two every time an attack occurs, the attacks will occur more seldom and often entirely disappear. The condition evidently takes care of itself and the operation, in my opinion, is unnecessary. But these people who have from their history developed acute gall bladder diseases, who have had definite acute attacks requiring morphine and which appear to be of gall bladder origin, probably from stones, that case must not be looked upon or viewed in this light, because we must remember all these eight or ten complications which I have mentioned, and remember that any of these complications might occur to any of these patients, and when they do occur a serious condition is present. When we take into consideration and study carefully the complications which might occur and feel that the risk to the patient is higher than removal of the gall bladder, which I think is the general procedure today accepted by most surgeons, there is less danger in taking this gall bladder out and the patient is relieved of his distress, rather than to allow him to take the chance of having any one of these complications occur, all of which are serious. We must try to visualize what it may mean to this patient who has a lot of gas and bloating and soreness and pain which extends through the back and who has to have hypos to relieve the pain, we must try to visualize what may happen to this patient as far as these complications are concerned, and if the patient is in good condition it is certainly safer to him to remove the gall bladder, because of these complications which may occur years after. To demonstrate this, a few days ago I saw a patient who thirty or forty years before developed stones which produced only indigestion until the stones became impacted down in the cystic duct and there was pressure on the common duct and portal vein, which produced ascites and jaundice. The question of damage to the liver came up, but at operation the liver was found in pretty good condition. The ascites immediately disappeared and there has been none since. In that case the complication developed thirty or forty years after, and we see that although the patient may be going

through a period without much trouble at present, always they have some in later life. In dealing with severe jaundice, these cases should be operated whenever they have a definite history of gall bladder trouble. The gall bladder should be drained or removed, and you can let the patient go on feeling that it has helped. This often occurs in younger people and we are justified in this when there is any definite history; in elderly people with any history at all, it is far safer to operate this patient after they have been given ten or twelve days to develop immunity to the infection present, and which we find always in the gall bladder itself and in the common duct. They have to be carefully prepared for operation. The blood should be examined for clotting time, etc., and if any change from normal is found, place the patient in the hospital and keep him in bed for a few days. After four or five days with calcium chloride, intravenous administration of large amounts of glucose, etc., operation can be done. If the patient is in fairly good condition and jaundice has not appeared for a considerable time, in such cases we usually find a small gall bladder, and can drain the common duct carefully after removing all the stones. I have seen so many autopsies where all the stones were not removed, and we always felt at the place where I was trained that an effort should be made to get all the stones. If these cases have gone ahead for a long period of time following development of the jaundice, two to six weeks, or three or four months, they are done under tremendous risk under any means I know of. Post-operative hemorrhages tend to come and we have to resort to transfusions, etc., after operation. In people who have gone on and developed purpuric hemorrhages operation is almost hopeless, and so far as I am able to ascertain these cases almost invariably die. I do not look on them as being surgical because death is almost always inevitable in any case. If such a patient comes to me I do not advise operation, because they usually die in a few days, or a very short time anyway. So far as dealing with acute cases of cholecystitis is concerned, I feel that there is no need to try to jump in and remove the gall bladder. In so many of these cases they give a history which shows that the patient has had repeated attacks, some of them twenty or thirty or forty attacks, similar to the one which they might come to us with. Infections in the gall bladder handle themselves very



much differently than infections in the appendix, and I believe that we can more safely carry this patient through, which I think is paramount, by taking them off food, giving proctoclysis, using external heat or ice, opiates as necessary, and allow them to wait from seven to ten days, at which time they apparently develop an immunity to this infection which produced the attack, and I feel that although we may find a gall bladder which looks bad there seems to be no particular risk in doing complete removal of it. But when we handle patients in this way we must remember that we occasionally run across a gangrenous gall bladder or empyema of the gall bladder. Empyema usually handles itself. In a gangrenous gall bladder there is excruciating pain which requires the continuous use of opiates, perhaps  $\frac{1}{4}$  morphine every two or three hours for a period of a day to three days, while in an ordinary attack the patient after one or two hypos is usually relieved. When the pain is excruciating and morphine has to be continued, it is customary with me to explore these cases, because many times a gangrenous gall bladder may be found.

In the study of these complications, we must have the courage to sit down and explain these things to the patient so that when they elect to take all these conditions, knowing that they will have to be careful with their diet and are likely to have attacks they will be safer than to have an operation performed. We hate to take out a gall bladder, it relieves the tension within the liver but there is a compensatory dilatation of the ducts of the liver and also the common duct, which seems to handle the condition so far as the tension is concerned, and many patients go for years and years without any trouble, and it is certainly safer to take it out than to try and keep it and run the chance of these complications which might develop. I believe the patient with long continued gall bladder trouble does not have the expectancy of life he would have were an operation performed.

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DISCUSSION: *Dr. Leroy Long*, Oklahoma City.

I want to emphasize the point that the taking of the history is perhaps the most important procedure in connection with investigation of patients who have symptoms that suggest pathology about the gall bladder. The gall bladder belongs to one group of organs, a quintet composed of

the liver, gall bladder, stomach, duodenum, and pancreas and disease of the gall bladder is frequently reflected to the other organs. In disease of the gall bladder the functions of the other organs are disturbed, and particularly the stomach. The reflex nerve supply comes from practically the same source, the sympathetic supply coming through the ninth dorsal node, the vagus coming from the superficial system. Now in the beginning of gall bladder irritation there is hypochondriac pain and regurgitation of food, in other words, the patient has indigestion. When it goes beyond that point there is absorption of the infection in the system and as it becomes more severe the biliary symptoms become more pronounced. This is a most conservative presentation that I am not able to agree entirely with in all respects. A reference has been made to what should be done when the mucosa becomes diseased. I believe the present consensus is that gall bladder pathology does not begin in the mucosa. That was such a beautiful theory that I hated to give it up. It was known as Norman's theory that there was descent of the infection from the bile through the liver gate to the liver by way of the portal vein, and that the toxic materials were taken into the cells and irritated the mucous membrane, and there was exfoliation of the epithelium. That was a beautiful theory and I hated to give it up. I do believe that we do have surface infection contributing; it has been pointed out by several authorities that jaundice and formation of stones are stopped entirely by removal of the spleen. In some cases a cholecystectomy has been done and still the patient has difficulty, and that difficulty is finally overcome by removing the spleen. I think it has been pretty definitely proven that gall bladder infections take place through the liver originally and that the infection goes to the gall bladder by way of the lymph system. There may be metastatic infection, but I think the average case is through the lymph system. Drainage from the lymph to the gall bladder is normally by the way of the cystic node which is situated at the junction of the gall bladder and cystic duct and by way of lymph nodes along the common duct. Normally there is no drainage through into the lymph system about the pancreas, but there may be in preceding pathology a subsequent pancreatitis. I am not so sure about what information one would get with reference to pathology of the gall bladder by use of the duodenal

tube. I am not at all opposed to it. I wish we could do more for people who have symptoms that are not apparently severe right at the present. We cannot tell how they will be ten or fifteen years from now; there are many cases like the patient reported in which Dr. Sistrunk had to do an operation for ascites and other pathology that came from a gall bladder that had been infected a long time ago. In experiments, dye has been injected into the gall bladder and then the duodenal tube used, introducing Epsom salts into the duodenum, and bile came out of the common duct but there would be no dye, but when the gall bladder was X-rayed the lumen was shadowed, but apparently duodenal drainage did not take it out. The extent of contraction is very little in the gall bladder; it can express but a few drops of bile. That must be borne in mind. So then, to sum up, in my judgment these patients who present certain definite evidences of gall bladder disease—in such patients I believe that it is the duty of the surgeon to tell the patient about the things that might happen to him later and to point out to him that while he is taking a great risk now, perhaps the best chance in the long run is to have something very definite done about the pathology of the bile tract area. I rather think that that is true. I think that most of us are doing cholecystectomies in the average case; I am not sure that we are always doing the right thing when we do cholecystectomies, but I believe that in cases presenting a definite picture of pathology of the bile duct area, the best ultimate result in that case is through surgical intervention.

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*Dr. R. M. Howard, Oklahoma City.*

Dr. Sistrunk has given us an excellent discussion of this subject. He has discussed it so fully that aside from emphasizing some points he has made he has left very little to be added. He made a very important point, I think, when he emphasized the necessity of a careful history in these cases. Some of them can be detected by laboratory methods alone, but a careful history in the case of difficult gall bladder trouble will be so definite that there will be little hesitancy in advising the type of treatment to carry out, and then our laboratory methods have been so developed today that if we add them to this careful history and our physical examination, the definite case can be diagnosed and the remedy, of course, is cer-

tain. Now he spoke of two types—he did not make them as two types but inferred that we really have two types of trouble about the gall bladder, the inflammatory type and the obstructive type that so often gives you trouble by producing serious damage to the circulation of the gall bladder itself. I have often thought of this since reading Wilkey, the man who brought out that we have two types of appendicitis, one the inflammatory type that develops and if you operate that case eighteen to twenty-four to thirty-six hours the patient will still be all right. He did not have a ruptured appendix or a gangrenous appendix. Then we have the obstructive appendix in which we find a fecolith obstructing the outlet to the appendix, and that is the type that we get in trouble with early. I have operated within eight to ten or twelve hours and been much surprised to find a gangrenous appendix. We can't compare the appendix to the gall bladder altogether, but we have definitely those two types of trouble, one or the other, if we are only able to recognize the case with stones in the cystic duct and the type of trouble that it produces, if we could only recognize that we are going to have a gangrenous gall bladder to deal with. Unfortunately our diagnostic acumen is not such that we are able to do that yet. Dr. Sistrunk also emphasized the fact that the mortality in these cases depends largely on the condition of the liver. I think that is usually a very important point. Aside from technical difficulties that may be encountered in operating these cases and the acute infections, aside from these the mortality largely depends on how much damage has been done to the liver. He did not go very much into discussion of what type of operation to do. I think statistics will show that cholecystectomy is the desirable thing, but when anyone tells you that the mortality is the same in cholecystectomy as in cholecystostomy, I think he is wrong, particularly in dealing with a certain type of cases, and I refer to the acute inflammatory conditions that develop in cases of old chronic gall bladder. I think the technical difficulties involved in some of these cases where we have a thick, broad attachment of the gall bladder to the liver, where we have many adhesions to separate, and at times abscesses to deal with, I think we should consider carefully in these cases and had better do the least we can to tide the patient over, and that often is cholecystostomy. To attempt to remove the gall



bladder in these cases may be more than the patient can stand. You may have to go back later and take it out, but you can do it later and may save a good many patients who could not stand an attempt to operate more radically.

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*Dr. Sidney J. Wolferman*, Fort Smith, Arkansas.

I didn't have any idea of discussing any of these papers. I want to agree, however, with the doctor who spoke of the impossibility of saying just what type of operation should be done. I think it is true in surgery connected with the upper abdomen, that came in the previous paper on the stomach and dealing with ulcer, that we do not go into the upper abdomen with our minds set to go and do any definite operation, but after you are in that abdomen if you are familiar with the different types that are done, you decide the type for that individual case and at that individual time. There are certainly times when the gall bladder should be drained and certainly times when it should be removed, but I do not think you can put down any definite rule as to what you should do. I think Dr. Sistrunk gave us a very excellent paper.

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*Dr. Sistrunk*:

I enjoyed this discussion very much, and it brought out some points. It was such a tremendous field to cover in such a short time that I could not go into the particulars in any field. I agree with Dr. Long in thinking that the cause of infection of the gall bladder and the means in which it occurs is a matter of disagreement. I mentioned the mucous membrane because I feel that infection often shows just in the mucous membrane. A good deal of work has been done along this line but up to the present time none of it has been definitely proven. I think we may have infection of the gall bladder walls first. In mild cases, comparatively early, very little change is found in the liver, but the longer the case exists the greater the liver damage is and the greater evidences of infection are seen in the liver itself. Finally the entire liver becomes involved. In the milder cases we may find very little liver pathology and only under microscopic study find some changes. I have always felt that the gall bladder became infected first. In fifty per cent of cases appendicitis is also present, and authorities have considerable to

say in regard to extension of infection from the appendix up to the gall bladder. Then again, while some men have felt that the lymphatics carry toxic material on through to the pancreas, they never have been able to prove that. Dean has tried to prove it but I don't think he has actually proved it. I didn't take the time to discuss management very thoroughly. So far as Dr. Long's point in regard to gall bladder drainage, as I understood him, through the duodenal tube, I agree with him in feeling that we can't use that more in a diagnostic measure. As far as treatment of the milder cases, that has been pretty well discussed. There is a good deal of question as to whether we can do them any permanent good. In these milder cases, if you will have these people take just a level teaspoonful of salts dissolved in hot water when they arise, taking about a third of it then and a little later another third, and then the rest of it, and eat breakfast about fifteen minutes later, that evidently shoots right through the stomach and duodenum, and in my experience achieves excellent results. There seems to be a good deal of disagreement about cholecystectomy and cholecystostomy. In 1910 I was associated with a clinic doing a great many cholecystostomies, while in the East cholecystectomy was looked upon as being the best operation. Later we found we had to operate so many cases and do complete cholecystectomies, and I have used that method except where I felt I would endanger the patient's life by doing a cholecystectomy. I have no fear, although it might look bad, in trying to take this gall bladder out provided a week or ten days has elapsed from the onset of the attack. In the beginning of the attacks, say the first forty-eight hours, I wouldn't want to do that at all, but if they can be allowed to get this immunity in six to ten days, it can usually be done. Of course every operator must know his ability to take out a gall bladder, etc. I think there are a good many men who think it better not to take it out and do drainage, especially where the pelvis of the gall bladder has become adherent to the common duct in one of the infections and where there is danger of injury to the common duct. I think a great many injuries to the common duct come in that way. We do see one type of gall bladder I feel it is better to drain, the type in which a cholecyanin stone is found; in these cases we usually find a single, rounded, loose stone. That type of gall bladder, as a rule, shows

thin walls and has a perfectly normal appearance, and I feel that many times it is better just to take that one stone out and drain the gall bladder. They have no symptoms, you accidentally discover it while doing some other abdominal operation. I think that type is perfectly safe with removal of the stone and drainage. In regard to Dr. Howard's point, I don't go in with any set rule, but I find in the majority of patients I do a cholecystectomy, and while I didn't try to bring out technique, for a number of years I have been doing most of them without drainage. I do eighty-five to ninety percent of them without drainage. The only ones I drain is where I have some oozing which might cause trouble. If I have good ligatures I don't put in a tube and I do not believe it has any effect on the mortality. It makes a good wound with less liability to hernia. In dealing with seriously ill patients, we want to get out, and do as short an operation as possible. In many cases it is better to drain and quit, it seems safer to do that, and in many cases I will just drain the gall bladder in dealing with a badly diseased liver. I have a patient today under my care who was operated a few years ago and had a gall bladder drainage for the removal of stones. She went to her surgeon and he told her he was going to do for her just exactly what he would have done for himself, he took out a number of stones and drained the gall bladder. That was in 1925. Today that woman showed definite stones again and is having definite gall bladder complaint. I have seen that a number of times, and I know that in 1910 we were doing cholecystostomies altogether and in a number of cases we had to go back and do a cholecystectomy, and I believe the cholecystectomy is best except where you feel that the patient's life is in danger; life is, of course, above everything else. The surgeon must know his ability to deal with any particular problem that he has and know that he has to do something for that particular patient to make the patient well. I never enter an abdomen with any definite idea, but unless certain conditions are present, I want to do a cholecystectomy. If I had a three-hundred pound man with evidence of liver damage, and I felt he was more of a risk than the average patient, I would drain his gall bladder and let him take a chance. It is altogether a question of trying to achieve results, but I believe cholecystectomy gives the best results.

## ECLAMPSIA—A DISCUSSION OF ITS MEDICAL AND SURGICAL TREATMENT

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Owing to the undetermined etiology the definition of eclampsia is essentially incomplete and we can only say that it is a toxemia of pregnancy characterized by convulsions, albuminuria and high blood pressure.

Medical history reveals that convulsions of pregnancy engaged the attention of medical writers in the times of Hippocrates and continues to do so today with no specific idea as to cause, and while we may feel sufficiently sophisticated to smile at the fact that until about the beginning of the nineteenth century eclampsia was confused with epilepsy, that smile should fade when we compare the earliest methods of treatment and remedies used with present day remedies. I make this statement because the history of the treatment of eclampsia for the last two hundred years is exemplified in the case records of eclamptics treated in most hospitals today, aside from those having their obstetrical departments directed by trained obstetricians, as asofoetidae, veratrum viridi, hot packs, venesection, turpentine stupe, and every purgative known to man is still being used.

There is no more terrifying sight than a woman in eclamptic convulsions and the desperation of ignorance in the presence of terror accounts for the diverse and oft times unscientific methods of treatment. Research, both clinical and laboratory, has given us valuable knowledge and from it have been evolved two principles upon which rational treatment is based. These two principles are elimination and sedation. When, if ever, the exact causative agent is determined, an antidote, or counter active agent, may be found to add to the multitude of remedies—or rather to displace them—such a remedy, however, would be a specific and would simplify both the preventative and curative treatment of eclampsia.

It is confusing to one not thoroughly versed in physiological and organic chemistry and particularly blood chemistry to try to evaluate the many theories and experiments that are at the present time occupying the minds of research workers who are trying to solve the etiology and



treatment of eclampsia. The practitioner or clinician not associated with these scientific research facilities finds it difficult to do more than follow and keep informed on the most rational therapeutics, and from a practical standpoint the most rational is that which gives the best results.

Some remedies are empirical as, for example, those having to do with terminating pregnancy. However, as the pregnancy is a factor in the etiology of eclampsia, its termination as a therapeutic measure is based upon the principle of elimination and includes all operative or surgical procedures from induction of labor to caesarean section. We cannot discard all empirical remedies but in the past decade much has been learned about the pathology of eclampsia, both organically and functionally so that we can eliminate some of them that both experience and reason have shown to be of little or no value.

Prenatal care, intelligently given, will now reduce the incidence of true eclampsia to a rarity. This fact is shown by the records of all well organized prenatal clinics. The prenatal clinic of the Tulsa County Public Health Association has operated continuously for ten years. During that time one thousand nine hundred and forty-three prenatal patients have enrolled and only one patient has developed eclamptic convulsions and she had been dropped from the roll on account of non-cooperation and failure to attend the clinic regularly.

While the prevention of eclampsia is not the treatment of it, I wish to discuss it briefly because the relative value of prevention to cure is much greater than the proverbial ounce to a pound ratio.

Let me say that preventative measures are indicated by rising blood pressure, particularly the diastolic pressure for it is the measure of the toxemia while the systolic pressure is less significant because it is influenced by other factors than the toxemia. A diastolic rising above 85 is a warning and when above 95 is an alarm.

There is little question but that the toxin responsible for eclampsia is a protein, or has its origin from some protein, and is aggravated by high protein diet. Hence, put the pre-eclamptic on a protein-free diet and increase elimination. With the less threatening cases with diastolic pressure

not above 90 m.m. give the following prescription:

Calcined magnesia (heavy)  $\frac{1}{2}$  oz.  
Sodii bicarbonate  $\frac{1}{2}$  oz.  
M. et sig.  $\frac{1}{2}$  dram in water tid.

Eliminate all meats and eggs from diet and insist upon a copious intake of liquids.

If diastolic pressure is above 95 m.m., I give ol. ricini, ounces two, put the patient to bed and cut the diet to a small glass of milk t. i. d. and fruit juices, preferably citrus fruits, keeping up the water.

The urine and blood pressure should be watched carefully and if any evidence of acidosis, prescribe potassium citrate, grains twenty, in a glass of water every four hours on alternate days.

In most of the alarmingly threatening cases they are well up to the viable stage of gestation—hence my preference for castor oil, ounces two, as a purgative as it may induce labor. (No quinine is given).

If the above measures are used, most cases will improve and few cases will require a more radical method or induction of labor.

The stage of gestation, the degree of toxemia and the general physical condition of the patient necessitate individualization but the principle of elimination must be adhered to and in good obstetrics due consideration must be given the fetus.

Before discussing the treatment of true eclampsia, let us review briefly the pathology for it has been thoroughly studied by competent pathologists whose findings agree to the extent that it may be said that the kidney and liver of the eclamptic is characteristic.

The kidney shows cloudy swelling with frequently punctate hemorrhages in the cortex. Microscopically, the interstitial tissue shows little or no involvement but the parenchyma is always involved, showing a disintegration of the epithelium of the urinary tubules. There is a thrombosis of the capillaries, the thrombi composed of red blood cells, and as a result there may be infarcts.

The liver grossly has a mottled appearance due to superficial hemorrhagic areas. The cut surface also shows mottling. Microscopically, the liver lobules and portal spaces show necrosis and thrombosis of the periportal vessels or capillaries. This necrosis, according to Schmorl<sup>1</sup>, is neither

inflammatory nor a fatty degeneration but an anemia or hemorrhagic necrosis.

Lesions of this character and extent in these two vital organs denote an illness or a condition from which recovery would seem impossible and as this knowledge has been gained from autopsy findings, we might readily conclude that it is only terminal pathology but kidney and liver function tests together with blood chemistry have shown that these organs are seriously disabled functionally and that they do recover, even when this pathology is far advanced, and also that death occurs in cases which show only a moderate involvement of these organs.

These facts concerning the pathology of eclampsia both mystify and enlighten; they show the serious morbidity of these patients but fail to identify the cause.

Other pathological conditions and results of this toxemia are found such as hemorrhages, thrombosis, necrosis, local and general oedema in various organs of the body including the brain and special sense organs. The convulsions are sometimes responsible for direct injuries of a disastrous nature. However, the organs most vitally concerned, both from the standpoint of pathology and treatment, are the kidneys and liver.

When confronted by a case of actual eclampsia, the first and immediate demand is for a sedative that will stop or control the convulsions. For this purpose it has been quite generally accepted that morphine is the most effective remedy we have. Magnesium sulphate is only a mild sedative. In cases of extreme nervous irritability and mania, sodium amytol may be used but we do not know much about its toxic effect upon either the mother or foetus. Recent reports, however, are favorable and doubtless it is safer than chloral or veratrum and much more delightful to administer than asofoetidae. Ether and chloroform we have known for many years would control the convulsions but their general toxic effect and injury to the kidneys and liver should make us discard them.

Immediately following the institution of sedative procedures, elimination must be begun.

The method of elimination that I have used for several years, i. e., the administration of water by gavage, was suggested by Dr. H. J. Davidson, of Seattle, and

while modified somewhat is followed in principle.

The convulsions and coma attendant upon eclampsia have, in the past, stood in the way of administration of medication by mouth. Hence, the dilution and elimination of this mysterious toxine has been attempted with hot packs, hypodermoclysis, proctoclysis and intravenous administration and I think that venesection and caesarean section might never have come to be popular procedures, even among general surgeons, had the idea of gavage of these patients been suggested with the advent of the stomach tube.

Briefly, the treatment consists of first getting the patient quiet by hypodermic administration of morphine, grains one-fourth to one-half, then administer through the stomach tube, ounces one-half to one of magnesium sulphate in a pint of water, or castor oil ounces four. If the tube is removed quickly and carefully, these patients seldom vomit. One hour later, if the patient is comatose, give by stomach tube potassium citrate, grains twenty, in a pint to a quart of water. This may be repeated every two to four hours until elimination is well established. As the delivery of these patients is, of itself, a well recognized therapeutic procedure, this should be accomplished as soon as possible after there is evidence of elimination being accomplished via kidneys and bowels.

I have used castor oil as a purgative mostly because it frequently induces labor or is conducive to uterine contractions. Fortunately, most of the patients, as I previously stated, are advanced to a stage of gestation where the foetus is viable.

In the delivery of these patients as a therapeutic measure is where we must individualize. For example: if the foetus is just up to the viable stage or, if not so far developed, and is responding to the treatment, it might be best to let her go on under careful observation.

In the case of choice of procedures for artificially terminating the pregnancy in eclampsia, one must again individualize, although obstetricians quite generally agree that a classical or abdominal caesarean section should not be done except in the presence of extreme disproportion. As the majority of eclamptics are not full term it is seldom that a marked degree of disproportion exists. If the abdominal



section is indicated, the low cervical section should be done.

Bag induction may in some cases of pre-eclampsia be indicated but should not be performed in actual eclampsia because it carries with it a higher maternal and foetal mortality than manual dilatation which is contra-indicated at all times. Eclamptics delivered via the vaginal tract show the lowest maternal mortality rate if bag induction and manual dilatation followed by forceps delivery are excluded. Not infrequently the full term eclamptic is found to be in labor and oft times those that are not have labor induced by the purgation. For those that do not start, or have not started in labor, I think the vaginal section with version and extraction is preferable and, if done properly, has the lowest maternal and foetal mortality rate next to spontaneous delivery.

During the past five years in treating twelve consecutive cases of eclampsia I have terminated the pregnancy six times by vaginal section and podalic version with no maternal mortality and one still-born, and in that case the foetus was dead before operation. The skin showed beginning maceration when delivered. There was also one low cervical caesarean section in this series which was complicated by abruptio placenta after having had nineteen convulsions.

#### DISCUSSION

This administering of liquids and medication via the stomach is simple, conservative and scientific and more effective because it must pass through the portal circulation and acts upon and is acted upon physiologically by the liver and kidneys as it will not if given intravenously or into the tissues. The diuretic action of plain water is greater given through the stomach than in any other way and in case of vomiting a duodenal tube may be used. It has been found by those who have studied the chemistry of colloids that they are most readily soluble in citrate solution; hence, the effectiveness of citrates as an adjunct in breaking up this kidney and liver block. Furthermore, the administration of citrates is effective in overcoming the acidosis practically always present in the eclamptic as evidenced by the decreased carbon dioxide combining power of the blood. This treatment may be given in the home although, considering the seriousness of eclampsia and the necessity for careful watching and expe-

ditious handling, I think all cases should be in the hospital.

The relative value of the surgical procedures has been intimated in the treatment outlined. Bag induction in the eclamptic is a slow procedure and is apt to precipitate convulsions, cause infection and jeopardize the life of the foetus. Manual dilatation is a crude mutilating operation, entailing shock, probably hemorrhage and infection and more or less permanent injury to the mother. Caesarean section is a major operation and hence a more serious one to impose upon a patient as gravely ill as the eclamptic mother. Furthermore, the eclamptic must be treated post-partum and the laparotomy precludes the possibility of administering immediate medical treatment via of the alimentary tract with the safety and effectiveness with which it can be given when the abdomen has not been opened. If caesarean section must be performed, the low cervical type of operation should be used because of its low mortality rate. The vaginal section with podalic version and extraction can be done quickly with much less danger to the mother and child and immediate post operative treatment can be given by mouth.

Comparing the classical caesarean section with either the low cervical or vaginal section, we must admit that from the standpoint of performance, the classical section is more spectacular and less difficult; hence, its popularity; but from the standpoint of morbidity and mortality when performed upon the eclamptic, first choice must be given to vaginal section.

In any case choice of procedure must be based upon end results and not upon the convenience and skill of the operator.

1. Kosmak, *Toxemias of Pregnancy*, Page 73; D. Appleton and Company..

2. Davidson, *Surgery, Gynecology and Obstetrics*; February 1923, Pages 280-282.

DISCUSSION: *Dr. J. G. Smith, Bartlesville.*

This is a scientific paper as well as a practical one. Regarding the cause of eclampsia—we see a great deal written about the cause of it. Personally, I think that in pre-eclamptic cases, as a rule they are sedentary people and not given to very much exercise, and it is simply an overloading especially of the eliminative organs of the body, organs that are already burdened with pregnancy. Now then, you have an unbalance, you really have a destructive metabolism,

you have the creation of the most specific toxin. If you take these pre-eclamptics, say before seven months, and give them eserine for elimination of the nitrogens by way of the liver, citrate potassium for the acidosis, with urinary sedatives and diuretics and salines for the bowels, your albuminuria and your toxemia sometimes clear up. Now this is in case, of course, it does clear up and your patient goes on to a normal delivery. If taken soon enough when your patient's blood pressure begins to rise and the ankles begin to swell, take them then and you can get them back to normal. If you cut down on the intake usually the outgo can take care of the condition. A little further along, especially in a primipara two or three weeks or a month before expected confinement, with profound toxemia evidently a lot of damage has already been done, and if you think you will have a surgical case the better time for the mother and also the baby is a week or ten days before confinement, and not let her go into eclampsia. So far as the treatment of true eclampsia is concerned, there is any number of treatments or ways of treatment but we must bear in mind, as Dr. Osborn has stated, sedation and supportive treatment and elimination, especially those three. I think all have agreed practically that morphine—we used to use chloroform—morphine is the drug we use now, from  $\frac{1}{4}$  to  $\frac{1}{2}$ , usually  $\frac{1}{2}$ ; if you use  $\frac{1}{4}$  you can use a certain amount of amytol, 2 to 6 grains, and you will get within thirty minutes a soft patulous condition which makes it easier for manual extraction or forceps delivery. If the case has gone to term and is in eclampsia, as a rule it is a poor surgical risk and after-treatment is interfered with as mentioned. Now then you have sedation, and the next thing is emptying the uterus. As a rule we do not find these patients in the hospital and we must treat them out anywhere and under all circumstances. After emptying the uterus give your patient four to nine grains of calomel soda, they will take it all right if you powder it and put it on the tongue, and one-half ounce of magnesium sulphate every hour until the bowels start and there is no question about your elimination and no question about the recovery of the patient from true eclampsia. I enjoyed Dr. Osborne's paper very much. He covered a large field, toxemia of pregnancy.

*Dr. Basil A. Hayes, Oklahoma City.*

I am not an obstetrician. I am a urologist but for the past one and one-half years I have been interested in the toxemias of pregnancy. Sometimes the cause is so close to us we can't see it. When I began the study of this condition, I went back into the autopsy records of the University Hospital to find what pathology was found in the kidneys of women who died of eclampsia, because one of the syndromes of toxemia of pregnancy is nephritis. Five cases had been autopsied, and I want to tell you briefly what was found in their kidneys: in the first, purulent infiltration, and tubular degeneration; the second showed the same microscopic pathology but the right ureter was dilated; the third, pyelonephritis with acute nephritis, moderate dilation of the pelvis and ureters; fifth, bilateral hydro-ureter, in other words, there were prominent changes in the pelvis of these kidneys. Now I looked up the literature on eclampsia. Crabtree in Boston and Bardwood in England have definitely shown that approximately half of all women show hypertrophy of the ureters, beginning as early as the third week of pregnancy. This appears to be complete the tenth or twelfth week. When you have pregnancy, in fifty per cent there is enough back pressure on the ureters that the ureters have to hypertrophy to get the urine through. The tenth or twelfth week that is over. By a perfectly striking similarity, the vomiting or ordinary nausea which began when the back pressure started, ends with the back pressure. There are various other evidences of the same thing. After getting into the thick of it I got the assistance of Dr. Wilson and Dr. Allen, who allowed me to handle some cases in the University Hospital. I had three cases there, each of which showed dilatation on both sides. In the third case catheter was installed in each ureter after a convulsion, and she went on and two days later had a normal baby. Six hours after the catheters were installed she said she felt better than at any time during her pregnancy. That started me to thinking along that line. I think there is no question that any of us will find toxemia of pregnancy from urinary back pressure that causes absorption by the veins of the kidneys. This absorption of the toxins which collect goes back through the circulation and causes nephrosis, which can be due to many types of toxins. It would probably relieve the



patient to get the kidneys drained. Soon that patient can void the accumulation of toxic products in the system. I enjoyed the paper very much. I think Dr. Osborn exactly correct when he said that up to the present time the cause has never been fully discovered. Elimination and sedation are certainly very necessary in these cases.

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*Dr. M. B. Glismann, Okmulgee.*

I want to comment on two points very briefly. I want to emphasize pre-natal care. The fact that they had one death in one thousand cases at the pre-natal clinic, this is the usual and ordinary result of pre-natal care. His other observation, that this patient had refused to co-operate, is the usual result of pre-natal care. We find that most of these eclamptic and pre-eclamptic cases appear under our care for the first time in eclampsia. The other point I want to emphasize is vaginal caesarean section. I believe it is a very excellent operation which we have side-stepped and which we have neglected. We do entirely too few vaginal sections. In the matter of sedation, I want to say that we have been using sodium amytal in the few cases of eclampsia we have had recently, and the effect has been very, very excellent, with, so far as we can see, no unfortunate after-results. I enjoyed Dr. Osborn's paper very much.

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*Dr. Eskridge:*

Dr. Osborn has certainly taken a very difficult subject and handled it as it should be handled. It is surprising how much we vary on the etiology of a disease that causes so much trouble and discomfort as eclampsia. I had a letter from a doctor in Idaho City stating that the ideas were all wrong and that it was due entirely to alkalosis. He didn't attempt to state what caused the alkalosis. It is surprising that we can turn around and use the drug that is contraindicated in this condition and get results. For the edema, we have been cutting down the salt intake to relieve the edema and to a certain extent improve the output of toxins. As for caesarean vaginal section, I have refused to do those in primiparas. My idea is that you get so great an amount of pelvic trauma which causes absorption of the tissue and causes toxemia greater than following abdominal section. In multiparas, especially around the seventh or eighth month, they should be delivered.

I think the quicker you relieve the causative factor the better off your patient is going to be. I don't think true eclamptic primiparas should be treated with sedation. I believe morphine is the best drug where you want to go ahead with sedation. I don't believe anything else will do a great deal of good. I do believe these women should have a great deal of water.

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*Dr. Nelson: Tulsa.*

I would like to call your attention to one part of Dr. Osborn's paper that has not been touched upon by preceding discussions. Davidson, who originated this treatment, pictured a "colloid block" of the liver and kidneys in eclampsia. Such expressions as "colloid block," "tissue thirst," "sedimentation rates," "viscosities," "osmotic or oncotic pressures," "surface charges" and many others are creeping into our medical literature. Very few of us have had even an introduction to physical chemistry, so we are handicapped in attempting to understand an author's views. Modern research workers in immunology, chemotherapy, and physiotherapy are coming to think along physico-chemical directions. To the physical-chemist, the blood, the tissue fluids, the cell membranes, the cytoplasm, and nucleoplasm are colloidal phases. The effects of ions and molecules on colloids are complex but sometimes highly selective. Just which colloid phase Davidson had in mind I do not know. But the fact that he uses potassium citrate and lots of fluids in a manner to reach the liver, suggests that possibly he had in mind the cellular colloids of the liver. We know that potassium (rather than sodium) predominates within the cells. If potassium citrate initiated a breaking up of some colloid complex, it is readily seen that fluids would be permitted to serve in elimination—if they don't play a principal part at first.

Dr. Eskridge, in his discussion, called our attention to some reports that a state of alkalosis exists in eclampsia. It might appear irrational to give potassium citrate in a state of alkalosis. We have heard much about alkalosis and acidosis without hearing enough about the complexity of such conditions. Some chemists and physical chemists question if we can measure hydrogen ion concentrations in complex colloid systems. If we limit our thoughts to alkali or acid excesses or deficits, we still forget to contemplate what phases or parts of the cells or humors are affected.

In eclampsia, possibly neither alkalosis nor acidosis are the usual critical factors. Possibly the exact vision of Davidson may not be correct, nor the therapeutic approach most efficient. We know that in colloid phenomena we may produce similar alterations by varied means. Colloid theorists from the time of Claude Bernard have made blunders, but we still have the same humoral problems before us. There are indications that physico-chemical conceptions, understood and applied, promise to correlate humoral and cellular pathology without destroying either.

Clinical results are the final criteria of the merits of a therapeutic procedure. In order to be fair to new therapeutic procedures, we need to ask ourselves if we have actually followed the procedure under correct circumstances. We can look back and see the blunders we have made in asepsis, antisepsis, serum therapy and vaccine therapy and too often not because of lack of data, but lack of understanding, or procedure. There is developing a gap between the thinking of physical chemists of medicine and the general practitioner similar to that which existed for years after the time of Pasteur, during which, the practitioners did not believe or understand the germ theories.

*Dr. Osborn:*

I appreciate the discussion very much. With reference to Dr. Hayes' treatment, I just want to say that I can't see how pyelitis is any more than a complication. It is not an etiological factor in toxemia of pregnancy. This paper was not written upon the toxemia of pregnancy and did not include the picture of early toxemia. These probably would be benefited by catheterization of the ureters, but you do not find the pyelitis complicating very many cases of eclampsia. Eclampsia has a definite pathology which always does include nephritis. I don't think Dr. Hayes would have very good success without some other treatment in treating cases of eclampsia, because in the majority of them there is no abnormal dilatation of the pelvis of the kidney and no pyelitis. There is an anuria. With regard to the efficacy of this treatment and relative value of the different remedies like magnesium sulphate and potassium citrate, I don't think that is the point in this. The point of most value in this treatment is the administration of liquids by way of the stomach by the stomach tube. For instance, I had one case where we were

unable to get six drams in twelve hours. Before we delivered her I put in a duodenal tube and administered a quart of water every two hours through this tube, with potassium citrate grains 20 in each quart, and twelve hours following she voided sixty ounces of urine and made a good recovery. In regard to caeserean section, there isn't any question but that the vaginal caeserean section has a lower mortality rate. If you submit the patient to abdominal section, as was said before, you can't give the post-operative treatment they should have by mouth. They are going to be much more distended. When delivered by vaginal caeserean section properly done the trauma is not great. I can show some vaginal caeserean sections you can hardly tell have ever been delivered. You can see only a fine line where the incision was made in the (anterior and posterior) lips of the cervix. One advantage in favor of that is a small foetus. They are usually not full term, although I have done them at full term with a good sized baby. One of many purposes in presenting this paper was the fact that very frequently eclamptics are brought in from outside and turned over to some general surgeon who does abdominal caeserean section, and doesn't consider treating the mother. The man who brings in the case usually thinks he has fulfilled his duty when he has turned it over to somebody else, and as a result the mortality rate is higher. I have the records at Morningside Hospital for the last five years. They had four abdominal caeserean sections for eclampsia and two deaths, showing a fifty per cent mortality, where with vaginal caeserean section you have none.

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#### STREPTOCOCCIC MENINGITIS WITH INTRACAROTID TREATMENT AND RECOVERY

Matthew S. Ersner and Theodore H. Mendell, Philadelphia (Journal A. M. A., November 5, 1932), present two cases of hemolytic streptococcic meningitis of otitic origin in which cure by intracarotid treatment was obtained. Mastoidectomy was performed in both, and blood transfusion, frequent lumbar taps and antistreptococcic serum were used as adjuncts in the treatment. Cerebral dehydration was used to great advantage in both cases. Energetic nasal treatment is essential if a successful outcome is to be attained. Forty-six cases of streptococcic meningitis with recovery are listed in the literature prior to this report. Whenever meningitis complicates an otologic condition, intracarotid therapy after the method of Kolmer is advocated early without delay, along with other treatment as a simple harmless measure offering some hope in the treatment of an almost hopeless disease.



## THE PHYSICIAN, A LEADER IN MENTAL HYGIENE\*

J. J. GABLE, M.D.

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Throughout America there is a growing urge for mental health, a demand for scientific facts to improve mental life. This demand for mental hygiene promises to enrich the lives of our people, give them more freedom from disease, and more years of happy, useful service. We are told that such urgent demand usually proves to be the "mother of invention", and we are expecting physicians to become the leading spirits in perfecting this invention.

The 1928 hospital census of the American Medical Association showed that one out of 325 persons in the United States was a patient in an institution for nervous and mental disorders, and that there are more patients in mental hospitals than there are at any one time patients in all the general hospitals of the country. In the opinion of conservative specialists in mental disease, about one-half of all cases of mental or nervous disorder could be prevented by timely application, largely in childhood and adolescence, of knowledge already available. Effective ways of applying this knowledge on a nation-wide scale have been worked out by the National Committee for Mental Hygiene and progress is already being made.

By mental hygiene we mean, that educational art in the field of nervous and mental diseases which endeavors to draw attention to and stimulate interest in the importance of mental health. Mental hygiene seeks to wage an educational war against prevailing ignorance regarding conditions and modes of living which tend to produce mental disorders. It seeks the development of wholesome mental states, reaction types, and proper adjustment habits in the infant, child, and adult. It seeks to show the relationship between poor mental health and dependency, delinquency, and domestic and social troubles. Mental hygiene not only seeks to protect the mental health of the public at large, but seeks to improve the mental health of the unstable and insane. It seeks to impart information in regard to

mental illness in order to break down past prejudices and superstitions. It seeks to inspire confidence in these institutions. In short, mental hygiene seeks to preserve the mental health of the normal and improve that of the afflicted.

Early medical advice and treatment is essential in mental disorders, behavior and personality problems, and all forms of human maladjustment if best results are to be obtained. People must be taught to consult their doctor about their mental ills just as they do their physical ailments. The successful doctor begins to practice mental hygiene early in the lives of his patients. He correctly teaches the mother that too much attention is not good for the child, that too much petting, too much coddling, sometimes interferes with normal mental development. He early detects the enlarged thymus, the non-secreting thyroid, and other endocrine dyscrasias. He is the first to notice the large head of the hydrocephalic, and the small head of the microcephalic, calling attention to the possible failure of mental development a few years later. He watches closely his encephalitic and anterio-polio myelitis cases, calling attention to the possibility of physical defects and behavior disorder later in life. He is quick to discern Sydenham's chorea, and careful not to mistake it for habit-tic. He answers the call to the child guidance clinic where he helps the children to help themselves. Here he not only helps the child, but he helps the parents by correcting false attitudes and practices, readjusting the family situations that so largely contribute to children's behavior disorder. He notices the timid, seclusive child, and advises the parent how best to deal with this shut-in personality. He tries to teach the parents that too much restraint, and too close supervision, too much parent molding is not conducive to proper initiative and independence later in life. In fact, the doctor is inclined to believe in the old saying of Austin O'Malley, "Do not pull the check rein too tight on a horse or a boy." This doctor is a firm believer in Boy Scout, and Camp Fire Girls' organizations, enjoys teaching them first aid. He realizes the fact that if he can make these children grow up cheerful and happy they will likely continue in this healthful mental state.

He advises his people not to conceal their mental troubles, but to air them freely, for later in life these repressions

\*Read before the Oklahoma State Medical Association, Tulsa, Oklahoma, May 24, 1932.

rebound out of the unconscious to appear as depression or behavior disorders in the conscious mind. He realizes that 50 per cent of all ailments are mental, that over 50 per cent of the people in hospitals today are in mental hospitals, and that 60 per cent of the acute mental states recover. With these facts in mind he tries to assure the families that it is no great stigma in the life of an individual to suffer a mental break, and that according to statistics any individual is just as likely to have some mental trouble as to have some physical trouble. He would have the laity to forget the word insanity, and insane asylum and tries to picture the more pleasing well conducted State Hospital where the mentally ill are just as efficiently cared for as the physically sick in general hospitals.

Psycho-therapy has been used since the earliest days of medicine; yet many well informed physicians have failed in their general practice because of the failure to master this art. Our doctor has a cheerful attitude and has kind words of encouragement which he uses in quieting the whims of the irritable and unreasonable, and allaying the fears of the apprehensive. He is quick to discern the temperament of his convalescent patients. For the up and going, he is inclined to give an attractive nurse, comfortable, cheerful surroundings, to prevent too sudden departure from bed; but for the neurasthenic who unconsciously enjoys being the center of the stage, he uses different tactics. In the traumatic case, he is firm and is likely to undervalue the seriousness of the injury in the presence of the patient and have the patient back to work before he has time to develop a traumatic or insurance neurosis. All this time he is practicing psycho-therapeutics, is doing so because he realizes that half his patients' ailments are mental and that psycho-therapy is the most efficient weapon in the struggle.

It is true that our hospitals have grown more rapidly than our state population. In this time of unemployment and economic distress, it is natural that we meet with more anxiety, fear, mental stress and strain often accompanied by pathological depression. The physician well trained in mental hygiene catches these cases in their incipencies and after proper analysis lets the patient see himself as he

is. He tries to teach him to face the reality, and often is able to prevent a major psychosis. Our doctor realizes that people are adjusting themselves to new and painful situations during these times of economic distress which has caused fear to arise in the hearts of many and it is this fear of the future that has taken the joy out of life. Take away a man's feeling of security and you have disrobed him of the highest essential of mental happiness.

Now the etiology of mental trouble is by no means a sealed book. Oft times we cannot put our finger on the exciting cause yet we believe the following to be the most frequent causative factors, namely: physical diseases, infectious and otherwise; inherited neurological taints and trends; syphilis; deprivation associated with overstrain, overwork and overworry; alcohol and drugs; senility and arteriosclerosis, and unhappy childhoods filled with repressed ideas, pushed into the subconscious, later appearing as painful complexes. Prevent these above causes, and overnight you cast the mental gloom from the earth. Nothing can go farther in preventing these six potential life wreckers than properly applied mental hygiene.

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DISCUSSION: *Dr. C. J. Fishman*, Oklahoma City.

I, for one, appreciate the trite, clear-cut, pointed statements made by Dr. Day, in this paper. It is only too true that the general practitioner is the one by whom the earliest symptoms of mental disturbance and so-called nervous break-downs are seen. It is to the family practitioner that the patient comes with troubles and complaints, and unless he is on the alert to look for the earliest signs of mental disturbances, he will often be misled into the serious consideration of organic disease by the early symptomatology. I realize the obstacles which lie in the path of early diagnosis. The complaints are usually not clear-cut, and often refer to symptom complexes such as are usually seen in early cases of organic disease. For example, how often fatigability, inability to concentrate, insomnia, digestive disturbance, loss of appetite are the premonitory symptoms of the nervous upsets as well as the premonitory symptoms of such diseases as thyrotoxic goiter, early tuber-



culosis, the various anemias, and gastrointestinal disturbances. It is therefore difficult to separate these early symptoms and consider them merely functional.

However, inasmuch as Dr. Day was speaking about mental hygiene, the prevention of further development in these cases is to be considered rather than the more accurate diagnosis, and if one keeps in mind the possibilities, prevention carries the major role in the comprehension and management of the cases.

Let us consider for a moment the symptoms of loss of appetite, restlessness, insomnia, and fear, that is so often present in children as well as adults. The etiological factors that contribute to these symptoms which are often early symptoms of the nervous break-downs are excessive fatigue as the result of the intense drive of social life and mental activities in school work as well as in business. How often are children driven to distraction by the multiplicity of their activities in school and particularly in their social activities, and their ambition to excel in their outside work, music lessons, dancing, and other attainments which their parents demand are necessary for a proper education and development.

Irrespective of what may ultimately develop, it is the province of the general practitioner, when his patients complain of some of these premonitory symptoms, that prophylactic measures be instituted, namely, rest, reduced activities, and improvement in general hygiene, particularly food intake which will result in increase in weight. These are important factors in the prevention of more serious nervous or mental upsets. The physician should, therefore, be alert to consider the possibilities of this pending danger and point out to his patient and to the family the necessity for these measures which will increase resistance to nervous break-downs. I am certainly of the opinion that loss of weight is an important factor in the reduction of resistance to nervous assaults, and therefore rest, food, and reduced activities are important for preventing the progress of mental disturbance both in children and adults.

## CHRONIC NON VALVULAR HEART DISEASE

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Of all the organs of the body, dependent, of course, upon the vascular system for nutrition, those vital ones, the brain, the kidneys and the heart suffer most from the degenerative processes which from one cause or another attack the arterial and arteriolar system at about the fifth decade of life. The affections of these organs make up the bulk of what may be designated as the degenerative diseases, which are responsible for a greater mortality and a greater morbidity than any other disease or group of similarly related diseases, stalking as it were through the world and striking down the most useful of our citizens in what we call the prime of life; and of these three, the heart for the most part incurs damage earlier and causes the death of greater numbers than the other two, heart disease having risen in the last few years to first place in the mortality tables, now taking an annual toll of 225,000 lives in this country alone, the rate rising in January and February, 1929, to 192 per 100,000. Hence, the degenerative diseases and particularly degenerative heart disease, constitutes the most important problem confronting the profession today, and this is my excuse for calling it to your consideration once again.

Christian<sup>1</sup>, I believe, is responsible for the term "Chronic Non-Valvular Cardiac Disease" to designate this large and important group of cases, met with in adult practice, in which myocardial impairment and myocardial insufficiency are based on damage to the heart muscle, unassociated with any organic lesion of the heart valves. Various other terms have been used, such as Chronic Myocarditis, Active Aneurism, Idiopathic Hypertrophy, Chronic Hypertrophic Myocarditis, Chronic Interstitial Myocarditis, Hypertensive Heart Disease, The Failing Heart of Middle Life, Cardio-Vascular Disease, Arterio-Sclerotic Heart Disease, and Cardio-Vascular Renal Disease. The designation used by Christian seems to me to be the most satisfactory, and has been chosen for the title of this paper.

The importance of non-valvular as compared with valvular heart disease may be judged from the following fig-

ures: Dr. Alfred M. Glazer<sup>3</sup> of the Department of Pathology of the University of Cincinnati, reports that of his series of cases, 3% are rheumatic, 14% syphilitic, 25% syphilitic and arterio-sclerotic combined and 41% arterio-sclerotic. Barron<sup>4</sup> says disease of the myocardium, non-valvular, makes up about 65% to 77% of all heart failure cases while valvular disease makes up 23%, about  $\frac{3}{4}$  of which are rheumatic in origin. At the out patient department of the John Sealy Hospital, Schwab<sup>5</sup> and Schulze found that 3.3% of all admissions, and 16.3% of admissions to medical division had organic heart disease, and that 57.2% of these belong to the hypertensive group, 20.2% to the arterio-sclerotic group, while the syphilitic and rheumatic groups together amounted to only 16.1%. Of 111 cardiac cases admitted to the University Hospital in the last year and a half, 40% were diagnosed valvular, 60% non-valvular, while of patients above 40 years of age, 70% were non-valvular.

Syphilis and rheumatic infection are responsible for practically 100% of valvular heart disease. Rheumatic fever is essentially a disease of early life, and most cases of rheumatic heart disease die within a twenty year period; syphilis is essentially a disease of early adult life; the heart lesions usually develop in from ten to twenty years, and the average life time after development of the aortic lesion is about five years; consequently these groups have largely disappeared from the scene before the age period at which non-valvular disease begins to make its inroads is reached. Beginning at about the age of 40, in increasing numbers as age advances, there appear at our offices or in the hospitals and clinics a group of patients, usually men, without history of syphilis or rheumatism, who have been active in business or profession, unconscious of any organic or functional defect, until suddenly it is called forcibly and painfully to their attention by the onset of symptoms of congestive failure or of the anginal syndrome; or what is more important still, with vague symptoms of irritability, indigestion, "neurasthenia", fatigability, etc.

What is the nature of this malady that is taking such frightful toll daily? What is its etiology?

Unfortunately but little can be said definitely in answer to these questions; and until they can be answered, but little

can be accomplished in the control of myocardial disease. Briefly, however, it may be said that myocardial disease is mainly on a basis of degenerative disease of the coronary vessels, which, in turn may or may not be a part of a generalized arterio-sclerotic process. MacLean<sup>6</sup> in a series of 95 cases of all ages found coronary sclerosis in 76%, this localization of arterio-sclerosis surpassing all others except the aorta, which showed the process in 92% of the cases. It is noteworthy that in MacLean's series, 91.6% of cases over 40 years of age showed coronary sclerosis. Levy at the Presbyterian Hospital in New York City in reviewing 1380 autopsies over a ten year period found 10.7% of coronary artery disease, and of these about 50% were arterio-sclerotic. While we have no definite figures at the University Hospital, the percentage is certainly much larger than Levy's, perhaps more nearly approaching those of MacLean. Certain it is that arterio-sclerosis of the coronaries is the most prominent pathological process in chronic non-valvular myocardial disease. With the narrowing or occlusion of the vessels due to this process the heart muscle becomes impoverished locally, dies, and is replaced by fibrous tissue, (fibrous myocarditis) which may be recognized as white scars which are resistant to the knife, principally localized in the anterior wall of the left ventricle toward the apex and in the inter-ventricular septum<sup>8</sup>. Similar scarring may be produced by syphilitic and other focal inflammatory processes.

If then non-valvular heart disease is due mainly to coronary sclerosis which seems to be identical in every way with general arterio-sclerosis, we must turn to the latter in an effort to learn more about the causes of this widespread degenerative process. Here again we must confess our ignorance. Moschowitz<sup>9</sup>, however, has made a number of significant observations, such as the occurrence of pulmonary artery sclerosis only in those conditions in which there is increase in the pulmonary pressure; that in the general circulation arterio-sclerosis occurs most prominently at points of greatest stress, as at the bifurcations and points of narrowing; that phlebo-sclerosis occurs only in relation to increased intravenous pressure, etc. Whether arterial hypertension is a cause of general arterial sclerosis, or of coronary sclerosis, certainly there is a most frequent association between the two; that it is not the only cause however



is evident from the fact that we see numerous cases of general arterio-sclerosis, and of arterio-sclerotic heart disease without hypertension; and sometimes we see hypertension exist for a long time without clinical evidence at least of myocardial involvement. Pardee<sup>10</sup> believes that hypertension *per se* is not the cause of heart disease, unless arterio-sclerotic changes affect the heart itself.

As already indicated, syphilis and rheumatism play an unimportant part in the causation of non-valvular heart disease. The importance of focal infection is still a moot point. My impression has been that it does play a part but I know of no definite proof. Christian has said that there is no evidence that other infections play an etiological role. Nathanson<sup>11</sup> has pointed out that in a study of 100 diabetics that came to autopsy, 41% had severe coronary disease, and that of the cases above 50 years of age, 52.7% had coronary sclerosis, as compared with 8% of non-diabetics of like age. He concludes that the essential cardiac lesion of diabetics is coronary sclerosis. According to Riesman<sup>2</sup>, overeating, insufficient sleep, worry, the strenuous life, are important factors, especially among the business and professional men, and we have all noted the frequency of heart failure, angina, coronary crises, and cerebral accidents among this class of individuals. One needs only to read the death reports of physicians in the Journal of the American Medical Association to be impressed with this fact.

It is recognized that those portions of the arterial system exposed to the trauma or excessive muscular exercise show earlier and more pronounced changes than those which are not so exposed; a noteworthy example is the sclerosis of the radial artery in manual laborers. Consequently, because of the continuity of cardiac function, and particularly in those individuals who place added strain upon the circulatory system by overwork or emotional excitement, one is not surprised to find the coronary system frequently involved.

In my own observations I have been impressed with the frequency of familial history of "dropsy", "Bright's disease", "a stroke", "high blood pressure", etc. It is my opinion that heredity is by no means the least important factor in the degenerative heart disease in particular.

The recognition of cardiac insufficiency is not difficult; the syndromes of congestive failure, angina pectoris and coronary occlusion are so well known that I need spend no time in discussing them. I prefer to take a few moments to stress the importance, the necessity, of recognizing non-valvular myocardial disease before the stage of insufficiency is reached. It is true that most cases of heart disease reach us in a state of heart failure; but each of us examine patients, in whom I fear there are signs of myocardial impairment which we fail to recognize, these are the patients to whom we may render great service if we are careful to search for the signs of heart disease, and are able to interpret what we find. Keeping in mind the high incidence of cardiac disease after the age of forty, we are negligent of our duty to the patient unless we search carefully and diligently for evidences of pathology of the heart muscle or of impaired function.

What then are the early signs of non-valvular cardiac disease?

First, and most important is the size of the heart. While there is not enlargement in 100% of the cases, this is the most constant and reliable sign of cardiac pathology. Appreciable enlargement is always significant. It may be recognized frequently by inspection, sometimes by palpation, occasionally by percussion, and in some cases, as in emphysema, or in the obese, only by fluoroscopy or X-ray pictures. Enlargement of the left ventricle with displacement of the apex to the left is the usual finding. Definite enlargement means dilatation; dilatation is always pathological. The larger the heart, the nearer is failure.

The stethoscope yields but little information of diagnostic importance in this condition. A muffling of sounds, or accentuation of second aortic sound, gallop rhythm, etc., may be noted. Murmurs are rarely heard in the early stages and I think it very important to know this. Too often physicians look upon a murmur as indicative of heart disease and consider a murmurless heart a sound heart. Nothing can be more fallacious than this misconception. I want to stress strongly the relative unimportance of murmurs in non-valvular disease.

Hypertension is a finding of importance; and even very moderate hypertension should not be discounted by the clinician. It is true that hypertension may exist without heart disease; and many

cases of heart disease do not show hypertension. But hypertension, however slight, accompanied by other signs of disturbed circulatory function must be considered important.

Next to cardiac enlargement, the history is the most important diagnostic guide. Subjective symptoms of a mild grade of cardiac failure may be present for a long time; fatigability, slight dyspnea and substernal oppression on exertion in excess of what had been noted in previous years; paroxysmal dyspnea, especially at night; nervousness, irritability, insomnia; "neurasthenia"; indigestion; nocturnal polyuria; palpitation; undue tachycardia after exercise; all of these are suggestive of myocardial impairment unless otherwise explained. Vital capacity is early reduced, and a test with the spirometer may yield significant information; also at this stage the electrocardiograph may be of assistance; however, negative electrocardiograph findings in no measure rule out heart disease.

As the condition of myocardial failure advances, the greater circulation is involved and we have the signs of congestive failure, namely; cyanosis, orthopnea, edema, enlargement of the liver, effusions into the various serous cavities, etc. It is at this stage that the patient seeks advice of his physician, when little of a permanent nature can be effected.

I do not wish to dwell upon the treatment of the major syndromes of heart failure; suffice it to say that in the full blown three indications are paramount.

1. Complete rest, mental and physical; this frequently can be obtained only by the use of opiates. The position in which the patient rests is immaterial.

2. Improvement of the heart tone if possible. This I believe can be obtained best by the use of digitalis in *adequate* dosage, in addition to REST. I know but one rule in the administration of digitalis: Give digitalis in adequate dosage whenever there is evidence of a failing myocardium.

3. Removal of edema. This is best obtained by the use of diuretics. Sometimes rest alone, frequently rest plus digitalis, will accomplish the desired result. When it is necessary to produce diuresis, two methods are available. If there is only moderate impairment of renal function, the organic mercurials, especially salyrgan in one cubic centimeter doses, in-

tramuscularly, every second or third day, work admirably. But usually, and always, if there is evidence of kidney pathology, it is preferable to try one of the Xanthine preparations as synthetic theophylline in the form of theocin or theamin in doses of five grains four times a day for four days. These preparations are not only excellent diuretics but possess the added advantage of being coronary dilators and so improve the circulation within the heart muscle. I know of one case of angina that has not had an attack since beginning this plan of treatment. In the hypertensive cases sedatives in the form of phenobarbital or amytal can be added to the Xanthine to the advantage and comfort of the patient. Both the Xanthine and the organic mercurials seem to work better if the alkalinity of the blood is reduced, and this can be accomplished by the administration of dilute hydrochloric acid, ammonium chloride or ammonium nitrate.

But it is the importance of diagnosis and proper management of the early cases of myocardial impairment that I desire to stress in this paper. Early diagnosis is most important. Brooks<sup>2</sup> says: "In the management of disease of the heart I would say that even more than in most other disease conditions early recognition accomplishes more benefit than any other factor. This brings most strikingly to our attention the great importance of the routine physical examination for everyone; and in very many instances, the early recognition of the heart defect tremendously prolongs life and greatly augments efficiency in every direction." Therefore, let me stress again the importance of periodic examinations; it is essential for us to preach this doctrine to our clientele; and at every examination of a patient who is approaching or has entered the degenerative period of life we must look for the signs of non-valvular disease of the heart.

Having discovered heart disease in an unsuspecting individual, there is no more delicate problem in medicine, none that requires more tact and discretion on the part of the physician. How many neuropaths have you seen, made such by the indiscreet remark of the doctor that the patient has a "leaky heart." Heart disease is dreaded by all. Perhaps it is best not to make known to the patient the actual condition if it can be avoided. The wise physician may be able to guide his patient to a less strenuous existence and a longer



and more useful life without telling him that he is the victim of an incurable and ultimately fatal malady.

A readjustment of the patient's mental and physical effort to his cardiac impairment is essential, and this is the most difficult problem of the physician. I point out to the patient that he tires easily, that he has some shortness of breath; that these are signals of distress that must be heeded; that he must adapt the rule of not becoming fatigued, of not exerting himself to the point of having shortness of breath; that this may be only a temporary condition from which he probably will recover rapidly if he will only observe some simple rules of living; he must be warned not to attempt to improve his condition by excessive exercise, but rather by rest with only moderate exercise; that he must avoid overweight, or if already overweight, then he should reduce his weight gradually by careful and sensible dieting, always avoiding dietary fads; that he must secure sufficient sleep and mental relaxation. Sedatives for the hypertensive and the emotionally unstable are essential; restriction of coffee, tobacco and alcohol in certain cases is important. Regulation of life to reduce cardiac strain is the main problem.

Conservative elimination of foci of infection is indicated. Too radical or too rapid measures are to be condemned. One has seen patients apparently thrown into a state of cardiac failure by the removal of several septic teeth.

Christian<sup>1</sup> suggests the advisability of the continuous use of digitalis in small daily doses in these cases, even when cardiac enlargement is first detected. This seems to be sound practice. Certainly at the first indications of failing myocardium rest and digitalis administration must be instituted, and the patient brought back to as near his normal state as possible gradually by careful regulation of habits, diet, graduated exercises, etc.

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#### HEMOPHILIA

During the last two years Carroll Lafleur Birch, Chicago (*Journal A. M. A.*, November 5, 1932), has had an opportunity to study thirty-five persons with hemophilia. They range in age from newly born to 52 years. Seven of these cases were sporadic, while twenty-eight had a definite family history. The author has traced the histories of twenty families which consist of from four to seven generations. An analysis of these histories shows that persons with hemophilia have more daughters than sons, while transmitters have more sons than daughters. Over 71 per cent of the transmitters' sons had hemophilia. Only from 10 to 15 per cent of the transmitters' daughters had at least one normal son and no hemophilic sons. Of the hemophilic daughters, only from 3 to 7 per cent had at least one normal son and no hemophilic sons. Nineteen patients have been receiving ovarian therapy for more than six months. Nine of these showed a good response, and nine showed definite but less marked improvement, while the condition of one remained unchanged. The response was both general and specific. The general improvement was shown by an increase in weight hemoglobin and vitality. The specific response was shown by a decrease in number and severity of the hemorrhages and a lowering of the coagulation time. The prolongation of the coagulation time in hemophilia is due to increase in the resistance of the blood platelets, for when this resistance is overcome mechanically, the blood clots in normal time. When certain ovarian preparations are added to hemophilic blood in a test tube, the coagulation time is decreased to one-fourth or one-half the time of the untouched control.

#### ABNORMAL UTERINE BLEEDING IN BLOOD DYSCRASIAS

Milton E. Kahn, Buffalo (*Journal A. M. A.*, November 5, 1932), reports four cases in which abnormal uterine bleeding was the first and most prominent symptom of a blood dyscrasia. Abnormal uterine bleeding is sometimes the primary and most important symptom of an underlying blood dyscrasia. Menstrual abnormality has been observed in practically all the blood dyscrasias, including secondary anemia. Thrombocytopenic purpura, above the other dyscrasias, seems most commonly accompanied by excessive, prolonged and irregular uterine bleeding. Careful and complete blood study is often of diagnostic importance in cases of disturbed menstruation for which no obvious pelvic lesion is responsible.

# THE JOURNAL

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### EDITORIAL

#### THE DEPRESSION AND THE VETERANS BUREAU

The Veterans Bureau, which means beneficiaries of it, has lately been singled out as targets, which has brought about a great deal of Federal expenditure.

It must be remembered that nothing of this was said in 1916, 1917, and 1918. Nothing was too good for the several hundred dollars a month man who went into the trenches for thirty dollars and the writer personally knows of many men who today are on the rocks and have never been able to regain their former economic

position. However this is the result of our wars. Ruin inevitably follows in its course, not only to the vanquished but to the victor as well.

The Federal budget roughly calls for an expenditure as follows:

Public Debt .....	\$1,136,700,000.
Veterans .....	\$928,000,000.
Administration and all Other .....	\$678,098,000.
Army and Navy .....	\$648,300,000.
Public Works .....	\$538,100,000.

Now it must be observed that the nation's taxpayers cannot meet this. The writer is one who is not in favor of singling out certain men, corporations or organizations to bear the brunt of this. Everyone should pay according to his means. In the first place it must be recalled that every able bodied citizen owes their efforts to the defense of their country in time of war; that has been a recognized rule since the formation and even before, of our government. It will be noted that a tremendous amount of money is called for for the maintenance of veterans and when these various demands are cut, which it seems inevitable they must be, no doubt the Veterans Bureau will have to accept its share. To the casual observer it would seem that there are many instances of over payment of compensation but the same observer also notes that there are men who must be helped from some source, either by the Federal Government or by the State in which they live. The writer has no means of knowing which particular departments of the Veterans Bureau should be entirely eliminated or merged with others, but he does know that there has been much unnecessary waste on the part of the Veterans Bureau and this waste is apparently due to an attempt to ape systems in vogue in our army, navy and public health service. It would be interesting to know the amount of money the Veterans Bureau has expended in useless transfers of employees from one place to another. Often these transfers have been made merely because the employee in question was *persona non grata* with the powers controlling a particular hospital. Occasionally a medical officer in charge attempts to get rid of an unsatisfactory employee by the transfer system, when as a matter of good business sense the man should be requested to do his work properly or discharged if he is incompetent. Another, and to the writer the most senseless and inexcusable waste has been brought



about by the legal department. Witnesses, knowing nothing whatever of the case, have been summoned hundreds of miles and back to testify. On three occasions the writer has been summoned and was not called to testify. A study of the record would have shown that the writer's testimony would have been injurious to the cause of the Government. Nevertheless the expense was engendered and the taxpayers paid for it. It is rarely ever that a prospective witness is contacted prior to trial by the legal department. Now, great and successful corporations and industries do not transact their business in any such manner. They first contact their prospective witness, find out what he has to say and then if it is worth while, summon him as a witness. This simple procedure seems to have utterly gone over the heads of many of the legal employees of the Veterans Bureau.

The per capita cost of caring for Veteran Bureau patients seems to be much higher than it should and some attempt should be made to lower it. It is the writer's impression that some of our Veteran Bureaus are not conducted so much as hospitals as they are houses of entertainment for the supposedly ill veteran. Another item of waste is the constant rehospitalization of patients who either want increased compensation or merely a place to stay. Our law makers, feeling the pulse and pressure of the veterans' complaints are largely responsible for this, for after a repeated examination it is not uncommon for senators and representatives, who know nothing whatever of the case, to insist that the man again be re-hospitalized. The writer knows of many such cases. Congress should keep its hands off these things, except where there are obvious grounds for complaint.

One of the best institutions we have in the state of Oklahoma is the Talihina State Tuberculosis Sanatorium. Its bed capacity is 250; the per diem cost for last year was \$1.51. The writer knows this institution and knows that most excellent work is being conducted there. On the other hand the per diem cost of the Soldiers' Tubercular Sanatorium at Sulphur for 1931 was \$3.54. A member of the State Budget Committee told the writer that the management of that institution stated that their cost was so high because they had to "humor" the patients. The taxpayers of Oklahoma maintain both of the sanatoria, but some income is obtained from patients

who are able to pay at the Talihina institution. This should be taken into consideration. We are not in favor of humoring anybody.

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### THE DANGERS OF X-RAY AND RADIUM

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Many years ago when the X-ray was first introduced to the world many physicians handled it without realizing its potential dangers, the result was that many very bright men eventually lost their lives from the use of the fleuroscope and exposure to radiation. Of course much of this has now been eliminated and most men doing that work, including technicians, thoroughly understand the dangers. It is well known that aside from burns, due to over-exposure, the X-ray technician, constantly exposed to the rays was liable to have a blood dyscrasia or anemia. This latter condition, it is said, is more or less fixed, that is, the injury though the technician refrains from further use of the X-ray is permanent to a certain degree. There are other dangers, however, which operators of the X-ray should thoroughly keep in mind. A very common danger, often not realized by the average man is the fact that a 110 volt light holds the possibility of killing an operator under certain conditions. These conditions seem to exist when contact is made with a conductor of electricity; this may be metal, but especially dangerous are fluids.

The recent death of one of our members while doing some X-ray work seems to warrant calling attention to these dangers. Certainly as to X-ray and radium none but the most thoroughly trained and qualified should undertake it for there are always lurking possibilities of a tragedy.

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### "TRAUMATIC HERNIA"

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Like the Irishman's pun there is no such thing.

All surgical authorities agree that "traumatic hernia" is practically impossible except in very, very rare instances. Nevertheless claimants are constantly appearing before compensation departments demanding compensation alleging "traumatic hernia." These cases are being eliminated by many companies who insist on a thorough examination of every applicant seeking employment before he goes to work. Nevertheless such cases will prob-

ably continue to arise from time to time. Quoting from the compensation laws of North Carolina, the following must be proven to the satisfaction of the industrial commission before they will consider that a hernia is of traumatic origin:

1. That there was an injury resulting in hernia or rupture.
2. That the hernia or rupture appeared suddenly.
3. That it was accompanied by pain.
4. That the hernia or rupture immediately followed an accident.
5. That the hernia or rupture did not exist prior to the accident for which compensation is claimed.

It may be seen by this that "traumatic hernia" is of rare occurrence, and all physicians should be very cautious before taking the stand that any given hernia is of traumatic origin.

Looking back over many years of individual work the writer recalls only one case he believes may have been of traumatic origin, but on the contrary he recalls many cases of claimed hernia due to traumatic origin, some of which were afterwards proven to be purely malingeringous. The case recalled was that of a Federal prisoner confined in the United States jail. His fellow prisoners became enraged with him for some reason or other and literally "jumped all over him," that is four or five men were on his abdomen, or as nearly as they could get on it at the same time. That case complied with the rules of the North Carolina compensation law. Complaint was made of the matter to the Department of Justice at Washington, and while it was admitted that it was due to trauma inflicted it did the man no good, for suit against his fellow prisoners was virtually useless.

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### ***Editorial Notes—Personal and General***

DR. C. A. THOMPSON, Muskogee, is ill at his home.

DRS. W. P. AND E. HALSELL FITE, Muskogee, attended the meeting of the American College of Surgeons held in St. Louis, in October.

AMONG PHYSICIANS HONORED, twenty-six State pioneers chosen by the Oklahoma Memorial Association for special recognition at the

Silver Jubilee of Oklahoma Statehood, were Drs. F. B. Fite, Muskogee; Frederick B. Hawley, Parksville, Mo.; D. P. Richardson, Union City; Fred S. Clinton, Tulsa; Fowler Border, Mangum.

THE WOMAN'S AUXILIARY of Oklahoma county acted as hostesses to the visiting wives of doctors attending the Oklahoma Clinical Society, in November. They were entertained with a bridge luncheon at the Oklahoma City Golf and Country Club, and tea given at the country home of W. R. Ramsey, by Mrs. Samuel R. Cunningham.

MRS. WALTER JACKSON FREEMAN, Philadelphia, president of the Woman's Auxiliary to the American Medical Association, died October 27th, after three weeks illness. The daughter of a physician, the wife of a physician, and the mother of two physicians, the life and interests of Mrs. Freeman were peculiarly closely allied to the Medical profession. Her father was the late Dr. William Williams Keen of Philadelphia.

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### **MANY HONORS TO DR. BORDER**

Dr. Fowler Border of Mangum, widely known throughout medical circles, has had six distinct signal honors conferred upon him within the past twelve months, all of them coming unsolicited and from widely separated sources.

It was about a year ago that the Oklahoma Municipal league presented him with a gold medal for twenty-five years of continuous and meritorious service in an official capacity in an Oklahoma municipality. The honor, the highest ever conferred by the League, was given because of Dr. Border's long service as mayor of Mangum. Although his service did not extend over a period of twenty-five years, the league held that his service was equal to a quarter century because of the commendable record he had made, states a Mangum newspaper.

A picture of Dr. Border and of the Border-McGregor hospital was included in a historical quilt being made for the Century of Progress exposition in Chicago next year.

J. B. Jenkins, noted sculptor, made a bust of Dr. Border to include in his exhibition of statuary at the Century of Progress exposition. Others chosen by the sculptor included Major Gordon W. Lilly (Pawnee Bill), Col. Zack Miller, and Will Rogers.

The senior class of Mangum high school elected Dr. Border class father.

The junior department of the Methodist Sunday school voted Dr. Border Mangum's most useful citizen. Of a total of 60 votes cast in the election, Dr. Border received 57.

Dr. Border was also one of twenty-six pioneers chosen by the Oklahoma Memorial Association for special recognition at the Silver Jubilee of Oklahoma Statehood, at Oklahoma City, November 16.



## DR. JOHN HUGH SCOTT

To the medical associates of Dr. J. H. Scott is given the privilege to know many things about him which were unknown to most people, even those of our fraternity. Being one of the older men who has made Shawnee the place of his medical practice, Dr. Scott is better known by us who have lived and worked with him for many years in this city and vicinity.

When we name him, it recalls the difficulties of medical practice in those past years, when modern methods and appliances were not so well known and used as now. He attained the highest honors which his immediate fellows, and his associates in the State could confer upon him, being several times the president of the Pottawatomie County Medical Society, and once the President of the Oklahoma Medical Association, in which offices he held the hearty cooperation of the men who conferred these titles upon him.

These mentions of his professional career were no less and not more remarkable than the things which marked him as a man of high morals and character. His life among his fellowmen, and with his family, was that of a gentleman of the finest type. He was very human, giving aid and sympathy in the manner of a nature which felt deeply for his fellows, fortunate and unfortunate. His private life as a man gave full evidence that he was an humble follower of Jesus, the lowly Nazarene.

He was fearless under the strain and stress of life, exhibiting a lion-like courage where men of weaker fiber would fail. He believed in and fought for the right with a courage and manhood that even an enemy would admire and respect both him and his cause. This endeared him to his friends, and gave him the respect of his opponents. He was a man who stood square to and with life and the world. He gave his best, and besides giving his best, he gave his all.

His courage in the extremity, when the malignant growth was taking his vitality, and sapping his life, was expressed by his own words, fearlessly, that it would soon be over. He calmly met his death, knowing as he did long before that life was about over with him. He had in this, as in other things, the fine high respect of his friends and associates, when they knew he was reaching the end which most souls dread. He entered into his daily tasks with a fearless heroism which marked him as a man of character.

Dr. J. H. Scott is gone, but his memory stays and will inspire his associates to more hopeful, helpful labors to the end, where communion will again be restored with him, our friend and fellow-worker, helper and human brother.

J. A. WALKER, M.D.,  
R. M. ANDERSON, M.D.,  
G. S. BAXTER, M.D.  
Committee.

## DOCTOR DANIEL W. WHITE

Dr. Daniel W. White, Tulsa, eye specialist on the treatment of trachoma, died in a Tulsa hospital October 31st, of a stomach ailment.

Dr. White was born at Luzerne, Pennsylvania, July, 1881. His preliminary education was obtained at Carbondale High School, and Pennsylvania State College. He graduated from Jefferson Medical College in 1906. After graduation he specialized in eye diseases. He lectured at the Chicago Polyclinic and had a clinic at Blackwell's Island hospital early in his career and at one time was in the department of public charities in New York City. In 1913 he was joined by his brother Dr. Peter Cope White at what is now the Sand Springs Hospital, built for them by Charles Page, millionaire philanthropist. This led to retirement to private practice during which he devoted much time to study and treatment of other eye diseases, including cataract. In 1919 they were appointed to establish clinics for treatment of trachoma for the government. In 1930 he went to Europe where he held clinics for the treatment of cataract at Glasgow, Vienne and Paris.

Dr. White is survived by his widow, and brother.

Funeral services were held in the Holy Family Cathedral, with burial at Carbondale, Pennsylvania.

## RELATION OF ALKALOSIS TO PEPTIC ULCER

Henry A. Rafsky, Louis Schwartz and Alexander W. Kruger, New York (Journal A. M. A., November 5, 1932), administered excessive doses of alkalis to sixty-one patients with peptic ulcers, by a method in which initial small doses were followed by progressively larger doses until there ensued a complete cessation of the symptoms. The carbon dioxide combining power of the blood plasma and the blood chlorides did not reveal any evidence of alkalosis in any of these cases. Patients with renal disease and allergic persons were treated more cautiously by this method. Patients with pyloric obstruction and extreme degrees of gastric hypotonia were not treated by this plan. Two patients, who were treated according to the Sippy method, developed severe symptoms of alkalosis and showed definite biochemical changes. In order to minimize the danger of alkalosis resulting from excessive alkaline therapy, more attention should be directed to the method of administration as well as to the type of patient to receive this form of therapy.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**On Certain Endocrine Factors in Menstruation and Menstrual Disorders, with Special Reference to the Problems of Menstrual Bleeding and Menstrual Pain.** Emil Novak, M.D., Baltimore, Md. *American Journal of Obstetrics and Gynecology*, Vol. XXIV, September, 1932, Page 319.

Dr. Novak has written a characteristically good review of the endocrine factors in menstruation and menstrual disorders, but the point of greatest interest is the work done and opinion expressed concerning dysmenorrhea. This is best given by quoting the following paragraph from his summary:

"Recent work on the problem of uterine motility indicates that this is subject to a definite cyclical influence, that folliculin is in general a stimulator and progesterin an inhibitor of the rhythmic uterine contractions. I have therefore advanced the view that the pain of primary dysmenorrhea is explainable, in part at least, on the basis of these facts. This pain is characteristically a day or two before the onset of menstrual bleeding, i. e., just at the time that the withdrawal of the inhibiting corpus luteum hormone takes place. While various other factors undoubtedly play a role in the production of primary dysmenorrhea (psychogenic, constitutional, developmental, etc.), the immediate cause would seem to be in a heightened irritability of the uterine muscle. On this basis, a very tentative suggestion as to a plan or organotherapy is made, to be combined, of course, with measures directed toward other such factors as those mentioned above."

—Wendell Long.

**Abnormal Uterine Bleeding in Blood Dyscrasias.** Milton E. Kahn, M.D., *Journal American Medical Association*, November 5, 1932, Vol. 99, No. 19. Page 1563.

This author is calling attention again to a very important, though not common, situation which, however, arises at any time in one's practice of medicine.

The importance of it lies in the fact that abnormal uterine bleeding may very frequently be one of the principal symptoms of a blood dyscrasia, if not the most prominent symptom. "Menstrual abnormality has been observed in practically all the blood dyscrasias, including secondary anemia."

These authors have presented a series of forty-five cases of blood disease occurring in women of the reproductive age, all of whom had abnormality of menstruations. "Thrombocytopenic purpura, above the other dyscrasias, seems most

commonly accompanied by excessive prolonged and irregular uterine bleeding." They also report four cases of abnormal uterine bleeding as the first and most prominent symptom of a blood dyscrasia. They recommend a careful and complete blood study of diagnostic importance in cases of disturbed menstruation for which no obvious pelvic lesion is responsible.

**Comment:** These cases, in which the abnormal uterine bleeding is the presenting symptom, are not infrequently seen and they require great care in the taking of the history and the performing of the physical examination prior to confirmatory laboratory tests. In the last year we have had two such cases where the abnormal uterine bleeding was practically the sole symptom of a blood dyscrasia.

—Wendell Long.

**Complications of Radiation Treatment of Gynecology.** Frank A. Pemberton, M.D., Boston, Mass. *American Journal of Obstetrics and Gynecology*, Volume XXIV, October, 1932, Page 552.

Dr. Pemberton has very clearly and honestly set down the record of complications of radiation treatment which occurred in the Free Hospital for Women at Brookline, Massachusetts, and also in his private practice. One of the most frequent complications which he mentions is inflammation of the bladder which appears in from two months to four years after radium treatment, which inflammation may be characterized by what seems to be devitalization of the tissues with a superimposed acute inflammation. These patients have urinary frequency, dysuria and most often bloody urine, with the symptoms continuing for about two months and gradually subsiding so that they are well at the end of four months. The pathological picture is ulcerations in the bladder which must be differentiated from tumors of the bladder, because in all of these radiation complications one must certainly not give more radium because of its deleterious effect on the original complication. Dr. Pemberton presents several cases and comments that this complication is more often seen in early carcinoma of the cervix where there is very little tissue between the cervix and the bladder.

In considering prevention of this complication, Dr. Pemberton suggests added care in keeping the bladder empty and the vagina packed with gauze during treatment, but even with these precautions it may frequently be impossible to entirely prevent such a complication. The treatment is entirely expectant and symptomatic.

Stricture of the rectum had occurred in seven of their cancer cases. He divides these strictures into intrinsic and extrinsic ones. The intrinsic ones are satisfactorily treated by dilatation, whereas the extrinsic ones usually require some plastic procedure after dilatation has been attempted.

He also reports four distressing complications



occurring higher up in the intestine. Two were strictures of the sigmoid. One a necrosis of the ileum in a patient with carcinoma of the cervix, and one an inflammation of the sigmoid adherent to the uterus in a case of menstrual dysfunction. He points out that two of these four cases had the intestines held in the radiation area by adhesions, while in the other two the loops must have stayed in the area long enough to be damaged. Dr. Pemberton calls attention to the fact that these complications usually occur late and that in their cases intestinal obstruction was the first symptom. He feels that it is quite probable that many lesions occur not advancing to intestinal obstruction and that with a thorough knowledge of such conditions and a more alert investigation we will find a good many more complications of this sort.

He makes a further comment that it would possibly be best to use Trendelenburg position during treatment with radium, but this would hardly be practical, due to the strain of the position, and no lesser degree of elevation would get the small intestine out of the pelvis. The more satisfactory means of prevention lies in thorough emptying of the intestinal tract and changing of the position frequently during treatment.

He also points out that it is well, even in the lesser amounts of radium given functional cases, to further restrict the indications for radium and refuse to treat women who have had former pelvic operations.

**Comment:** This article is abstracted in some length because the material contained is valuable, and secondly, because there is very little in the literature about this very important field.

—Wendell Long.

**A Method for the Prediction of Sex in the Unborn.** John H. Dorn, M.D., and Edward L. Sugarman, B.S., *Journal American Medical Association*, November 12, 1932, Vol. 99, No. 20, Page 1659.

These authors are giving a preliminary report on a most interesting phase of laboratory diagnosis. They have injected immature male rabbits with the urine of pregnant women, and have found that the urine from women who are to bear female children causes the testicles to ripen, whereas the urine from women who are to bear male children causes no change in the testicles of the rabbit.

Due to the various influences which increase or retard the maturity of rabbits, it was found necessary to develop some way of determining the maturity of the testes, because if the testes are in the abdomen they are not mature enough, and if they have already descended into the scrotum they are too mature for the test. They feel that as long as the testes are in the inguinal canal, a period of about ten days, it is perfectly safe to use them.

The basis of the prediction was upon the microscopic changes in the testicles of the rabbit noted forty-eight hours after injection. They were able to prognosticate the sex of the unborn child in 80 to 85 cases, despite the fact that they were overcoming certain technical difficulties in this first series run.

**Comment:** While the test will be of tremendous popular interest and in that way will be very valuable to clinicians, probably the most important

feature lies in an additional step towards better understanding of the hormone regulation of the genitals and reproduction, a field which is making tremendous strides at this time.

—Wendell Long.

**A Critical Study of the Technic and Clinical Value of the Sedimentation Rate of Gynecology.** M. J. Summerville, M.D., and F. H. Falls, M.D., Chicago, Ill., *American Journal of Obstetrics and Gynecology*, September, 1932, Volume XXIV, Page 389.

These authors made an investigation to determine:

"1. What factors in connection with the routine performance of this test influence the sedimentation rate of red blood cells under the conditions of the experiment.

2. Are the claims correct as to the clinical value of this test."

For the sake of clarity, the following comment and conclusions are quoted:

"It would seem from the above findings that there are many factors that may influence the sedimentation rate in gynecologic patients. From a practical point of view it would seem that the test is weak from the following reasons:

1. Because marked variations occur when blood samples are withdrawn by experienced and inexperienced people, or by the same person varying the time taken to withdraw the blood.

2. That, blood examined by this technic must not be drawn longer than two hours before the test is run.

3. Blood which has been kept in the ice box must not be used until it has been brought to room temperature.

4. The blood must be drawn to the same height in pipettes in order to get equivalent readings.

5. If the samples of blood were not shaken for at least a minute, after removing the blood from the veins, marked variations in the sedimentation rate were noted. Most descriptions of the technic ignore this important source of error.

6. Because of the results in this series in which 250 gynecologic patients were examined and 201 operated upon and an additional 84 obstetric cases were studied, we feel that the test is of little or no value. This conclusion is based on the fact that in 153 cases, the operation was done when it was distinctly contraindicated by the sedimentation test but indicated according to the clinical findings, temperature, and leucocyte count. There was no mortality in these cases that could be attributed to infection following operation such as septicemia, pelvic abscess, or general peritonitis. Postoperative morbidity, complications, and hospital days did not vary from that of 48 operative cases with normal or subnormal sedimentation rates."

#### Conclusions

1. Many factors inherent in the technic tend to vary the rate of sedimentation of red blood cells as determined by the Westergren method.

2. There was no correspondence between the rate of sedimentation and the pathologic findings at operation.

3. The sedimentation rate was of less value than the ordinary clinical factors such as tem-

perature, leucocyte count, and pulse rate in determining whether or not a patient should be operated upon.

4. Great economic waste would result from the application of this test to determine the time for operation."

**Comment:** The experience which these men have had in the clinical value of sedimentation rate test is very much what my own has been, and while it is a nice additional bit of information, it's value is somewhat overemphasized by certain gynecologists.

—Wendell Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Diagnosis and Treatment of Infections of the Urinary Tract in Childhood.** Henry F. Helmholtz, Rochester, Minnesota. *Minnesota Medicine*, October, 1932. Page 703.

The author covers this subject thoroughly, in summary he states: 1. Acidification of the urine in acute pyelitis should add to the efficacy of large amounts of fluids in washing the urinary tract free from infectious material. 2. Methenamine in combination with ammonium chloride to acidify the urine to a PH PF 5.5 or less has proved superior to any other of the urinary antiseptics I have used. 3. By use of the ketogenic diet the urine can usually be rendered bactericidal when the PH. is below 5.5. Ketonurine of PH. 5.5 is an excellent antiseptic for clearing up urinary infections and ketonuria should prove useful in preparation of patients for operation on the urinary tract as well as their post-operative treatment.

**The Value of Blood Examination in Public Health Work.** R. A. Vonderlehr, Virginia Medical Monthly, 1932. Vol. LIX.

The author leaves the impression that the prevalence of syphilis justifies the belief that Wassermann test is the most important laboratory aid in preventive medicine. Failure to do a routine Wassermann for syphilis in hospitals, clinics and similar institutions is inexcusable.

**The Fundamental Principles in the Successful Treatment of Urinary Fistulas.** R. S. Mallerd, Fort Worth, Texas, *Journal of Medicine*, October, 1932. Page 396.

In conclusion of this article, the author states that the important points he wishes emphasized are:

1. Diversion of the urine from the fistulas or the field of operation.
2. Clearing up of the infection in the fistulas and urinary tract before operation.
3. Excision of all scar tissue along with the tract.

4. Leaving the wound open, closing only the mucous membranes tightly.

5. Free application of Di-Chloramin-T to the wound.

6. Keeping the urine diverted away from the fistulous tracts until all tests prove them to be closed, after a reasonable period of time.

**Urethrography—M. A. Nicholson, and M. J. Fiala, Duluth, Minn. *Journal Urology*, October, 1932.**

The authors discuss the early methods offered for urethrography, and positions used for exposure of patient. They prefer as a solution equal parts of lipoidol, and oil of sesame. Position used is illustrated in article and is described as the dorsal position, turning the body slightly to the left, the left leg flexed, and right leg extended. They show illustration of special clamp for penis which was devised by Knutsson of Stockholm. They state that in strictures and diverticula this method of approach for diagnosis is very good.

**The Transurethral Application of Ultra-Violet Irradiation to the interior of the bladder for the relief of tuberculosis and other infections of this organ.** John R. Caulk and F. H. Ewerhardt, Saint Louis, Mo. *Journal Urology*, October, 1932.

The authors report a case upon whom a tuberculous kidney had been removed nine years previously. She had rebellious bladder lesions, which had been treated with heliotherapy, general hygienic measures, and every conceivable type of intravesical local application. The other kidney had remained free from the disease, and the bladder lesions had been aggravated with a colon bacillus infection. She was voiding with great pain, every hour during day and some eight to ten times at night. He then devised an apparatus which is described in article for inflating bladder and applying ultra-violet radiation. She was given five seconds the first day, and five seconds increase each succeeding day. After four applications the urine became clear, and free from bacteria, the patient showing the most remarkable improvement, could hold her urine for three hours in day and voided only once during night. Pain and burning completely subsided.

They state that the disappearance of the colon bacillus infection certainly indicates that the ultra violet rays are definitely germicidal, and stimulated the healing of the tuberculosis.

Anyone interested in the therapy of syphilis, and the writer assumes that this subject touches all branches of medicine, will profit much in securing the last five numbers of the periodical, "Venereal Disease Prevention," published by the U. S. Public Health Service. In these issues five clinics, Public Health, Mayo Clinic, Stokes, Udo J. Wilde, and Moore and Clark have all cooperated in publishing their collective statistics, as to therapy, incidence, etc.



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## COLOSTOMY, RADIATION THERAPY AND PERINEAL RESECTION FOR CANCER OF RECTUM

According to George E. Binkley, New York (Journal A. M. A., November 5, 1932), colostomy, radiation therapy and perineal resection form a combination of technical procedures which appears to offer the greatest possibilities to a certain group of patients with cancer of the rectum. This combined therapy has not been extensively employed, and it is questionable whether the additional advantages afforded are fully appreciated. By the use of the combined method, patients are given the benefit of two methods of treatment, namely, radiation therapy and perineal extirpation, either of which is capable of providing clinical cures in selected cases, but both of which may be found wanting when used alone. The author has combined the two methods in a small group of cases, and feels that the percentage of clinical cures has been increased and that much greater palliation has been afforded in incurable cases. When preoperative therapy is used, it is impossible to estimate in a mathematical manner the improvement in results of the combined methods, but such results are clearly demonstrated by post-operative therapy, owing to the fact that there is definite proof of existing disease at the time when radium is given. From 1924 to 1931 inclusive, the author treated by the combined method forty-two patients, twenty-one of whom were males and twenty-one, females. The ages varied from 30 to 72 years. The results obtained appear to warrant continuation of this form of therapy in selected cases. Many of these cases could not be classified as favorable operable cases. These patients were given the combined treatment because it was thought to offer greatest possibilities. In twenty-seven instances there was gross extension beyond the rectal wall. Definite fixation of the tumor was present in five cases and partial fixation in eighteen, while in nineteen the cancers were considered freely movable. Mobility, however, is a poor criterion as to the extent of disease when the tumors are located in the lower part of the rectum and anal canal. Three patients with highly malignant tumors had undoubtedly widespread unrecognized metastases at the time treatment was commenced, and therefore should not have been subjected to these radical procedures. In five instances, operation was performed for relief from pain of removal of a large sloughing mass. Only two deaths among the forty-two patients operated on occurred while they were in the hospital; that is, the operative mortality was only 4.8 per cent. These figures demonstrate that the use of preoperative radiation therapy does not increase operative mortality. One of the patients died of intestinal obstruction, the other, of pelvic peritonitis. Although sufficient time has not elapsed to bring all cases within the five year limit, we have at present 56 per cent of five year clinical cures in sixteen patients treated prior to 1927. Seven of them are alive and well and two others were known to be alive at the end of five years. One of them was lost from observation and the other died of pneumonia. The other twenty-six have been treated within the past five years; sixteen of them are alive and well; the other ten are dead; three died of intercurrent disease, not of cancer. The duration of life of those dying of cancer varied from four months to four and one-half years.

## FALSE RUMORS CONCERNING VIOSTEROL DENIED BY DR. STEENBOCK

Ever since viosterol was offered to the medical profession about four years ago, it has been attacked by various persons. Some of these attacks no doubt were sincerely motivated, but others were seized upon and exaggerated by interests who had no viosterol to sell.

Recently a new form of anti-viosterol propaganda has been reported by physicians all over the country. It is circulated by word of mouth—never in writing—and the apparent purpose is to influence physicians to prescribe vitamin D agencies other than viosterol.

Physicians are being told, for example, that Dr. Harry Steenbock has "condemned" viosterol, that the Wisconsin Alumni Research Foundation "would withdraw viosterol from the market in ninety days," etc., etc.

In answer to these malicious untruths, Dr. Harry Steenbock makes the following statement:

"Viosterol in its various forms has to date been found fully as valuable in medical practice as was anticipated at the time that it was first introduced to the American markets. Up to the present time there have been no reports of any untoward effects from its administration, although originally it was anticipated from the results of animal experiments that some cases of intoxication might result from its use in human medicine. I see no necessity for reversing my original opinion as to its outstanding merits in any way whatsoever. Any statement to the contrary can be definitely labeled as false."—(Signed) H. Steenbock.

Physicians can draw their own conclusions and form their own opinions of any house that resorts to sharp practices by allowing its representatives to spread unfounded whispering campaigns against a valuable therapeutic agent that has endured four years of the most searching experimental investigation and clinical use not only in rickets but also for controlling calcium-phosphorus metabolism generally.

## EXPERIMENTALLY PRODUCED PEPTIC ULCERS: DEVELOPMENT AND TREATMENT

Frank C. Mann and Jesse L. Bollman, Rochester, Minn. (Journal A. M. A., November 5, 1932), point out that acute gastric or duodenal ulcer has been produced experimentally by numerous methods, but the subacute or chronic ulcer has rarely been produced in animals. They present a review of the results of investigations carried out in their laboratory over a period of years on experimentally produced peptic ulcer. The lesion they have studied simulates both macroscopically and microscopically peptic ulcer as seen in man. They have determined some of the factors responsible of its causation. They have been able to observe the development of the lesion from its incipency to its maturity when it had become a typical chronic peptic ulcer as seen in man. They have also been able to make the chronic lesion heal and to observe the process whereby it heals. The studies have given them a clear, composite picture of the entire life cycle of the experimentally produced peptic ulcer.





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# THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

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L. D. 535—Telephones—4-8161

Tulsa, Okla.

# Antirabic Vaccine

## SEMPLE METHOD

*Product approved by  
Council on Pharmacy and Chemistry of A. M. A.*

1. Patients bitten by suspected rabid animal, on any part of body other than Face and Wrist, usually require only 14 doses of Antirabic Vaccine.

Ampoule Package.....\$16.50  
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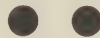
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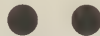
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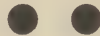
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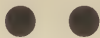
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